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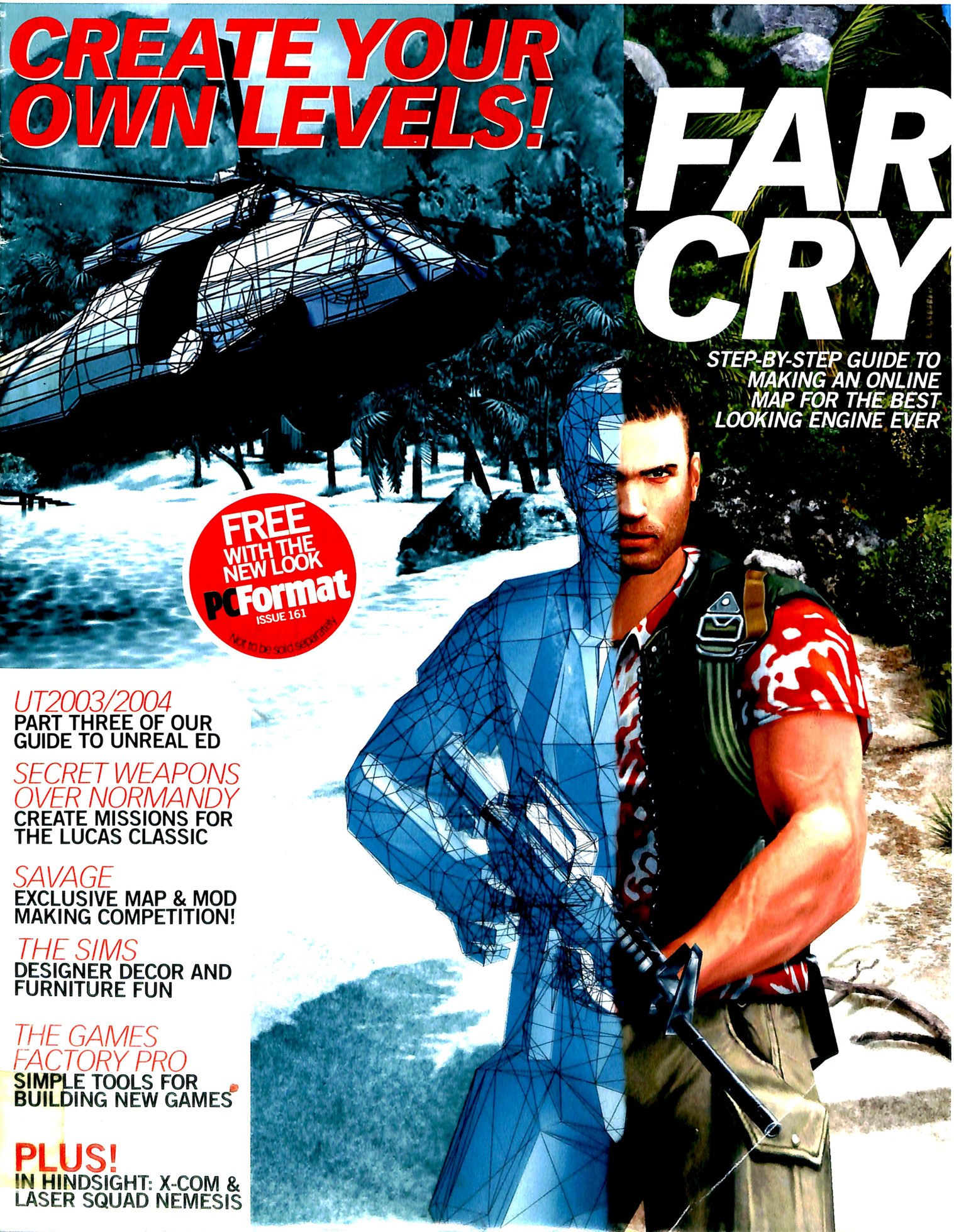

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largin' it.

Cor, it's big in here. ECHO! ECHO. Cor. Lot more space than being tucked away at the back of the mag, innit? For those of you who don't know what you've got here, this is *GameMaker* – a supplement exclusive to *PCFormat*, dedicated to getting more out of your games, and featuring top tips from top developers.

This month, we feature an interview with the Gollop brothers, the force behind *Laser Squad* and *UFO/X-com*. We have tutorials showing you how to edit *Far Cry, Unreal Tournament 2003/04, The Sims, Secret Weapons Over Normandy,* and an exclusive modding competition with *Savage* – you could win £1,300. Oh, and we have news about the best gaming mods and the best new betas., too

Enjoy the mag, and get in touch!

gamemaker@futurenet.co.uk

Dan Griliopoulos

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disc contents

THE GAMEMAKER ELEMENT OF THE DVD HAS ALL THE LATEST DEMOS, MODS AND PATCHES AS WELL AS FULL TUTORIALS AND MORE CONTENT THAN A CHESHIRE CAT.

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GAMES FACTORY PRO

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BLITZ 3D DEMO SHOWCASE PART 2

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BATTLECRAFT
CALL OF DUTY
MASSIVE ASSAULT
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TUTORIAL CONTENT
THE SIMS
FAR CRY
SECRET WEAPONS OVER NORMANDY
GAMES FACTORY PRO

news

WHEN MODS AND RETAIL GAMES COLLIDE, MARK HOLTHAM DONS HIS REFEREE'S SHIRT AND SPLITS THE SWEATY COUPLE.

No Ride of the Valkyries theme tunes here (licensing costs money), but easy-to-control hueys and slightly quirky modelling make for a stunning experience.

Yes, that's a historically accurate face: the SVA were really, really ugly. (Who says it's the winners who rewrite history?)

"Little birds, little birds, they get larger every day" to quote that famous Vietcong supporter, Maurice Chevalier.

Eve of Destruction

Battlefield Vietnam for free?! Has an amateur effort outperformed a professional team?

It's astonishing when you play a mod for the first time and realise that it's nearly the same quality as its respective retail game. *Eve of Destruction* is one such mod. Set in Vietnam as the USA enters, *EoD* has been beautifully rendered, with four different sides and realistic Hueys, T-54s and so on. So good is it that it actually challenges the recent *Battlefield Vietnam* on both realism and entertainment. Will they be able to co-exist?

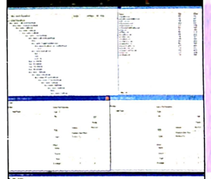
The *EoD* team has just released its 0.31 quality patch, indicating that the mod, while not ready, is getting there. Corrections within the patch focus mainly on modelling faults, minor weapon tweaking and keeping the player as engrossed in their tropical environments as possible. The *EoD* team is waiting to see how Digital Illusion's *Battlefield Vietnam* fares in the shops and online before it decides whether and how it should progress, but in the meantime this is definitely a recommended download.

http://www.planetbattlefield.com/eod/

UT2004 //Red Orchestra Delayed

Epic's *UT2004* demo has had a huge influence since its release. The popular WWII mod, *Red Orchestra*, has had its forthcoming update held back, in anticipation of utilising the *UT2004* engine. Not only are the team planning to improve their multi-player game with the addition of vehicles, but they are also in the exciting progress of adding an unusual single-player game to the mod.

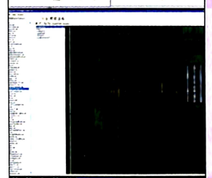
www.unrealwarfarex.com/redorchestra/



Battlefield //MDT 2.0 Release

The latest version of the *Battlefield Mod Development Tools* is a huge improvement. It now fully supports both *Battlefield Vietnam* and *3D Studio Max 5 and 6*. The latter is backed up with an impressive vehicle importer allowing modellers to switch between modelling and the games engine with a bit more comfort. Updating to *Battlefield Vietnam* couldn't really be any easier.

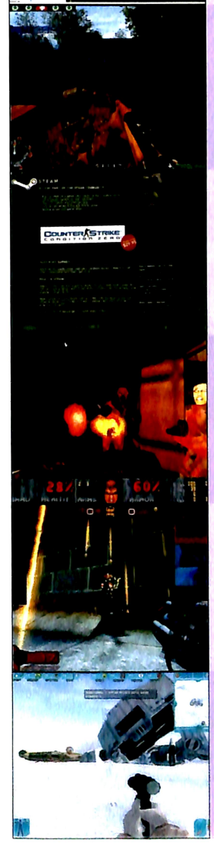
www.planetbattlefield.com/mdt/



UnrealEd //WOTgreal Deal

The single-handed creator of the award winning *WOTgreal* scripting software for *UnrealEd*, Dean Harmon has signed a deal licensing it to Epic. The *WOTGreal* package has been regarded as a essential tool for budding and expert developers, which is something that was acknowledged when it was voted first in the Best Tool category of the Make something Unreal Contest.

http://www.wotgreal.com/



Call of Duty //Heat of Battle 0.3 Out

Still flush with fresh-faced youth, but getting more impressive with every update, *Capture and Hold* adds a new game mode to *Call of Duty*. The distinctive *Return to Castle Wolfenstein* feel is bolstered by new skins, maps and mission types, and unique touches (like being able to shoot enemies' weapons out of their hands). Granted, the maps are still very basic but, in our eyes at least, it has potential.

http://hob.mikesmarauders.com/

Steam //Steam hiccups

Counter-Strike players have been subjected a lot since the launch of CS 1.6. Recently, Valve's service suffered from a distributed denial of service attack (DDoS) which shut down the system for over two hours, leaving players unable to play. And all this on top of a publicly released patch that was recalled after it was discovered to be crashing gamers' systems: ooops.

www.steampowered.com or http://valve.speakeasy.net

Doomsday //Doom revisited

Having your eyes crust over in pixelated horror as you play your favourite game of yesteryear in high resolution is never nice, but we need not worry anymore. Thanks to the *JDoom* mod, based on the Doomsday engine, you can now play the game in full screen with the extra added benefits of improved graphics, enhanced keyboard and mouse controls and even more defined menus.

www.doomsdayhq.com/

UT2003 // Unreal Warfare

From the famed creators of *Death Ball* comes a new game type, *DB Warfare*. Our group mind went rampant with thoughts of cracking an opponent's Coconut with a skillfully rebounded shot, but thankfully Team Vortex's Project leader David Münnich cleared things up stating that the game is inspired by *Worms 3D*. *Warfare* is in a very early state and is available along with the current *Death Ball* release.

www.deathball.net/

BF1942 // Galactic Conquest 0.2 Alpha update

The initial release of *Galactic Conquest* was buggy and very deserving of its alpha name. Now in version 0.2 the GC team have set their hearts on correcting their past mistakes and bring the mod closer to the *Star Wars* world in which it is based. The new content is a *Star Wars* fans' delight. *GC 0.2* now includes brand new vehicles, seven new maps and new and improved graphic updates. And no midi-chlorians.

www.galactic-conquest.net/

INDUSTRY EYE

Conference calls, says Owain Bennallack, editor of *Develop* magazine...

"Study the pros" is good advice for budding young anybodies, whether it entails you standing rigid in a mosh pit fixating on Jack White's guitar licks, checking out Alan Titchmarsh's spade control, or just noting how Asst. Mgr. P. Dias keeps his burgers flipping smoothly on a particularly busy Saturday night.

Observing game developers in action is, however, problematic for us unsalaried mortals. And anyway, that's probably better phrased as 'game developers' inaction' – the typical working life of a focussed game programmer being best caught using time-lapse photography. But the glacial pace of professional game development does mean that there's no excuse for you not to plunder the latest development trends for tips to employ in your own productions, whether those trends concern coding (the current excitement over physics and DirectX shaders, for instance), artistic (exactly when did every other FPS turn a leafy green?) or design-related (what will YOU cross with *GTA: Vice City*?).

On that note, a rare public outing of professional developers' concerns will take place in San Jose, later this month, when thousands of the world's best – or flushest – game-making folk jet in for the Game Developer Conference (GDC). Besides prompting a state-wide run on Diet Coke, the event will host hundreds of pro-to-pro lectures, from id Software's John Carmack guessing at what games will do with the next million-fold improvement in processing power, to Shiny's Dave Perry offering lessons on working with Hollywood studios.

Only the most ambitious amateur game developer can hope for a call from Tinseltown, of course, but the overwhelming focus on game/movie tie-ins at GDC does betray the industry's nervousness about original, self-created content right now. A real bummer or an opportunity for gamers rolling their own?

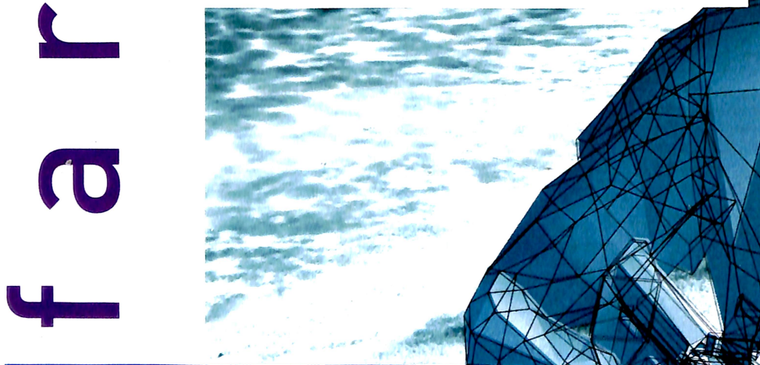
With so many games competing for a time-starved public's attention, developers think it's safest to give people what they already know. Can you do the same? Hollywood licences are out of the question, alas, but what about classic (and copyright-free) British legends, or a game based on Grimm's Fairy Tales? If publishers with multimillion pound marketing budgets aren't confident they can sell the unfamiliar, your game will surely benefit from friendly faces too. For more on GDC, head to www.gdconf.com. Meanwhile, I'm packing for San Jose, and will return next month with some insights into what else game developers are doing. Either that, or it's back to studying burger flipping.

www.developmag.com

far cry

IS THE NEW *FAR CRY* EDITOR THE MOST INTUITIVE MAP-MAKING TOOL EVER? TRY IT, AND FIND OUT FOR YOURSELF.

I first saw the *Far Cry* editor about six months ago, at a boozy press event somewhere in western Germany. Part way through the event, I was called into an interview with the company's founders, Cevat and Faruk Yerli, which sobered me up immediately. On screen they were moulding a piece of terrain, painting new textures over it, changing it from day to night. This was astounding enough, but then, with just one click, they jumped straight into the game. No lag, no processing problems, just straight into a Sandbox mode of the game. Wow! So the first thing I did when we got preview code from the game into the office was to boot up the editor. I've been fiddling with it for about a month now, and, with help from the Crytek boys, we now think we're ready to show you how to make your own map. For a start, we'll simply outline how to make a standard Free-for-all map, based around an extinct volcano. Then we'll turn it into a Team Deathmatch level, then into an *Assault* level (a unique Capture-The-Flag mode.)



Dan Griliopoulos made his first *Doom* map about 10 years ago and, thankfully, deleted it 10 minutes later. Despite forays into *Starcraft* and *Warcraft III* scripting, Dan is defiantly an amateur, proudly showing that anyone can use the *Crytek Sandbox*.

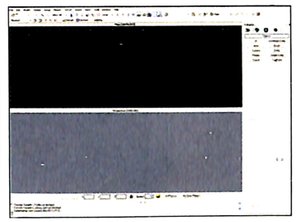
DIFFICULTY MEDIUM
TIME TAKEN 5 HOURS

WHAT YOU NEED...
Full version of *Far Cry*, a P3 1GHz with 256Mb RAM and 64Mb 3D card.

ON THE DISC

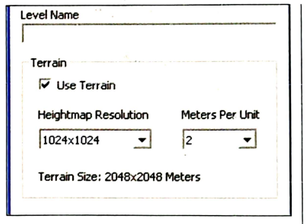
// LAND, HOE!

The first steps to starting your map.



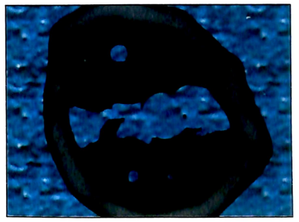
01 FINDING THE EDITOR

Start the **Sandbox mode**, which you can find in the **Bin32 folder** or the **Far Cry program folder**. You'll be presented with a pair of windows and an enormous number of toolbars. The top window is a map display, the bottom a real-time render of the map you've made. At the moment both are either blank or full of water, because we've not made anything. Click the blue button with the plus sign, next to Mission0 (top left of screen), which will add a new mission, and type **FFA**.



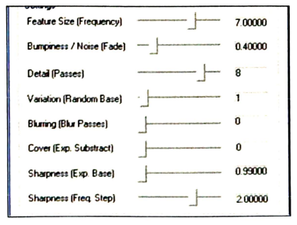
02 STARTING YOUR MAP

The first thing we need to do is start our map. Click **File➡New** and select your parameters. As we're making a multiplayer map, we'll restrict it to 512 x 512 units, and reduce the unit size to 1 metre. Note this means that you can make a map that claims to be 4,000,000km². Enter the level name, making sure you're not duplicating names (the editor should stop this). Click **OK** then **Save**. Saving the map is essential or the editor will refuse to generate the terrain later on.



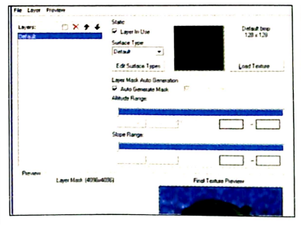
03 TERRAIN GENERATION

We need something to work with. Click the **Terrain** button on the toolbar to bring up the **Terrain** window, as above. From here you can manipulate every aspect of the terrain, from water levels to the colour of the sun. Try clicking on the image, and you'll see you can paint new heights on to it. Click the **Generate terrain** button. Depending on the settings, different island layouts are created. Instead of this, you can draw the map, or import a greyscale heightmap, in BMP format.


Feature Size (Frequency) 7.00000
Bumpiness / Noise (Fade) 0.40000
Detail (Passes) 8
Variation (Random Base) 1
Blurring (Blur Passes) 0
Cover (Exp. Substract) 0
Sharpness (Exp. Base) 0.99000
Sharpness (Freq. Step) 2.00000

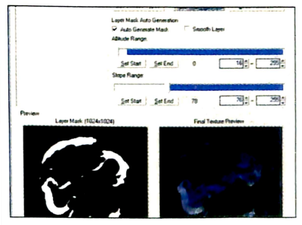
04 TERRAIN TWEAKING 1

Now you can tweak the map. Click the **Modify** button to bring up a set of tweaking options. For a normal map you'll want to run **Smooth Beaches/Slopes**, or players may have trouble getting out of the water areas. **Feature Size Frequency** increases the amount of land, while **Bumpiness** and **Blurring** affect how rough and smooth the map is. The **Variation number** is a random seed that can dramatically alter the layout. Have a play around to try out other elements.



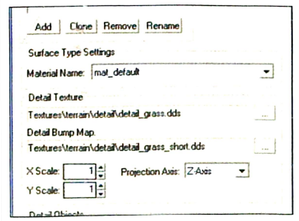
05 TERRAIN LAYERS

Before you can generate the 3D preview for the map, you need to properly set up lighting and textures. Click the **Surface Texture** button and the **Terrain Layers** window will pop up. Here you create the multiple surface types, and the rules by which they are applied. First create your layers; we chose Underwater, Beach, Rock, Grass and Steep Slopes. Create an Underwater level, then click the **Load Texture** button and add suitable textures for each layer.



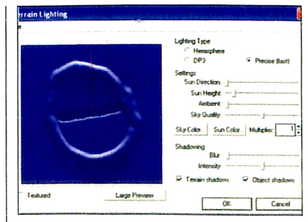
06 SLOPES

Select the Underwater level and drag the top slider to **16** and click **Set End**. This surface type will be applied up to a height of 16, and on any slope. Repeat with Grass, Rock, Beach and Steep Slope, setting reasonable different height scales for each. Now, for all but Steep Slopes, set the end point of **Slope Range** to **125** (equivalent to 45°; 90° is 255), and set this as the start point of Steep Slopes. These appear as masks in the preview image, showing the area which they will apply to.



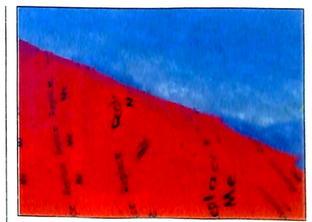
07 SURFACE TYPES

Click the **Edit Surface Types** button. You're now in the **Surface Type** screen; this determines the properties of given surface layers. Create surface types corresponding to each of the layers (you can choose the same surface type for multiple terrain layers). Assign an appropriate material for each one from the list. Now select a detail texture from the list (this only appears when you're close to the textured location). You're allowed a maximum of seven surface types, so use them wisely.



08 LIGHTING YOUR MAP

Before you can finally start playing around with the terrain, you'll need to light the map properly. Go back to the main **Terrain** window and click on the **Lightbulb** icon. From here you can affect the direction, intensity and colour of light, both from the sky and from the sun. (There are also individual dynamic and static lights, but they're not really usable in multiplayer, as they increase the processor drain too much for most servers. We'll cover them for singleplayer next issue.)



09 LAYER ASSOCIATION

On your way out, if you've done something wrong it's likely you'll see the above landscape, consisting of thousands of kilometre-high red letters. Don't worry, they merely indicate you've not yet generated the surface texture. Click **File➡Generate Surface Texture**. Initially, select a low-res tiling. It won't look so good, and you might find some red 'Replace Me's remain, but it'll give you an idea of the map. If you still have nothing but red 'Replace Me's, only then you can worry.

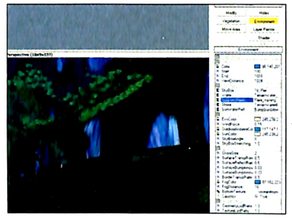
GET AROUND, GET AROUND

Moving around the level is easy enough, if you know how.

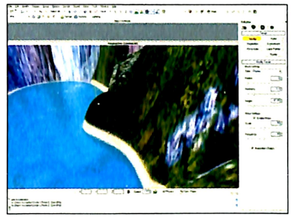
Using the [W], [A], [S] and [D] keys and mouselook, you can scroll inside your preview window, albeit rather slowly. To speed this up, increase the Speed parameter at the bottom of the window. You can also move along all the axes using the middle mouse button, zooming in and out with the mouse wheel. You can also use the Object selection window (the yellowed page button on the top toolbar). Pulling this up allows you to select any object, group or selection of objects. If you then click out of this and then click on the Go to Object button on the right-hand side, you'll pop to the object, and have it selected.

Mouse wheel
Zooms in and out
Right-mouse
Looks around
Middle-mouse
Moves along axis
Middle & right-mouse
Zooms in and out

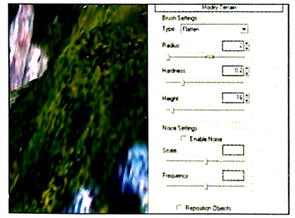
// ADDING COLOUR
Making a realistic environment is key to a convincing map.



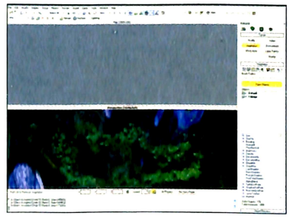
10 THE ENVIRONMENT PANE
Access the **Environment** pane under the **Terrain** tab of the **RollUpBar**. From here you can alter the lighting of the map, just like the Lighting window. However, you can also affect the general environment colour **EnvColour** and the ambient colour **OutdoorAmbientColour**. These affect the colours on an entire map, and are best kept to light colours, unless you're making a night mission. Fog also affects the colour of the map and how far the player can see.



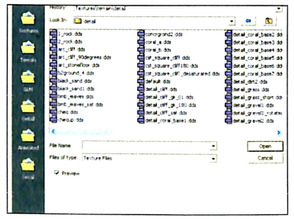
11 TERRAIN TWEAKING 2
The **RollUpBar** has four tabs. Click on the second tab, **Terrain**. For the moment, click **Modify**. You'll see you have a circle in the preview pane. This circle can be increased in size and hardness (the strength with which it applies its effect). The **Smooth** setting will remove aberrations in the terrain, turning it into a smooth curve. The **Flatten brush**, on the other hand, moves every unit under the circle towards a specified height, although increasing the noise will randomise it.



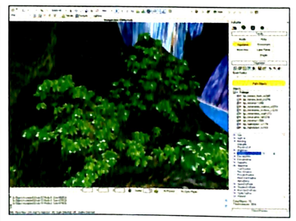
12 TERRAIN TWEAKING TIPS
When altering the heightmap like this, you can speed up your editing by using a number of keyboard hotkeys. You can increase and decrease the size of the **brush radius** with the numberpad **[+]** and **[–]** keys. You can also increase and decrease the height parameter for the **Flatten** brush with the number pad **[/]** and **[*]** keys. The most useful tool is the height sampling tool; just **[Ctrl]+left click** the sample height, and the brush will pop to that height.



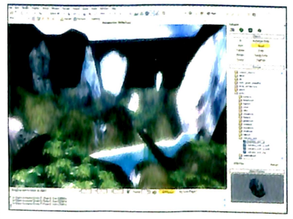
13 VEGETATION
Now you've created your level's structure, take a quick look around it. You can drop into the game with **[Ctrl]+[G]** (see side column on p5). Looks a bit bare, doesn't it? Click the **Terrain** tab of the **RollUpBar** and select **Vegetation**. Click the fourth box along, with the medal on it. This creates a vegetation group, so give it a name like **Foliage**. With that selected, click the box with the blue plus sign on it, navigate to **Far Cry ➠Objects ➠Natural**, and select an appropriate directory.



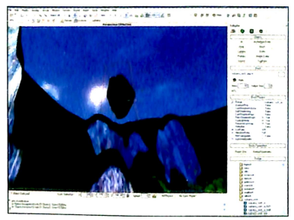
14 MORE VEGETATION
Select items in the directory to include in your map. Hold [Shift] to select multiple ones (avoid ones with the addendum lod as they appear incomplete.) Click **OK** and highlight several vegetation items you want to paint (their will buttons turn from blue to red). Increase the **Brush radius** to about **10 pixels** and click the **Paint Objects** button. In the properties box click on **Density** (see Step 15's screenshot) and enter a figure around the number of vegetation types you've selected.



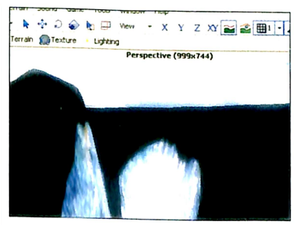
15 VEGETABLE-BASED PAINTS
Click the **SizeVar** button and set it to between **0** and **2**. Below 1 varies the objects from normal size to tiny, above 1 varies them upwards from the norm. If you increase the **Bending** setting, the plants will bend more in the wind. If you want to put slope limits on the objects, do so now with **SlopeMin**/**Slope Max** commands. Now paint the landscape. To cover whole the landscape according to the rules you've assigned, click the third button from the right under **Vegetation**.



16 GET YOUR ROCKS ON
Rocks are going to be our first examples of objects. Objects make up most of *Far Cry*'s environment, and can be accessed through the **Object** tab of the **RollUpBar**. There's a disconcertingly large selection of buttons here, so for now just click the **Brush** button. Next select the **Natural ➠Rocks** section, pick a selection that fits your location (we chose Vulcano_rock), and choose a rock from the drop-out box. To apply the rock to the landscape, simply drag and drop it.



17 ROCK AROUND THE CLOCK
Now we have our rock floating somewhere over the landscape. It will have three axes displayed at the moment, and three planes between the axes. Click on the vertically arrowed cross on the top toolbar, then select either one of the axes or one of the planes, and drag; the object will move with the cursor. Place it somewhere appropriate. Now lock the rock to the landscape by clicking the **Lock to Landscape** button (a red line over green fields).

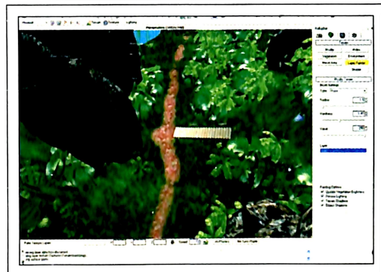


18 ROLLING THE ROCKS
Select your rock and press **[Ctrl]+[C]**. This will produce another identical rock, copied along the landscape. Move it away from the original rock then select the **Rotate** tool. Spin it around a couple of the axes, and push it into the landscape slightly. You can have it intersecting with the original rock, to make a larger rock, if you so wish. You can also alter the scale of the rock, using the **Scaling** tool, if you want a touch of variation with your rocks.

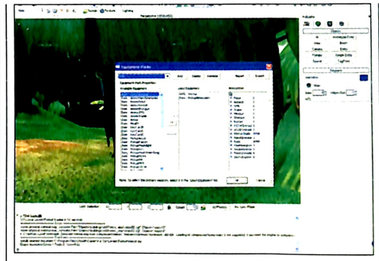
BRUSHES, ENTITIES, AREAS AND ARCHETYPES
A quick explanation of the Crytek glossary.

One thing the *Cry* engine does not do well is restrain terminology. There are hundreds of different types of object, all with subtly different properties. Brushes, for example, are inanimate objects that have a certain solidity to them (although they may only be one-sided, appearing as glass from the other). Entities are brushes, plus they have interesting alterable properties and can have weird programmed traits. AI objects are self-explanatory; we're simply AI creations from humans to... well, you'd better finish the game before I go any further. However, when you get to Archetype entities, Simple entities, and Prefabs, it becomes a lot harder to discern just what they're each meant to do, why they have these over-complicated libraries associated with them, and why none of them are applied to the map in quite the same way. Frustrating!

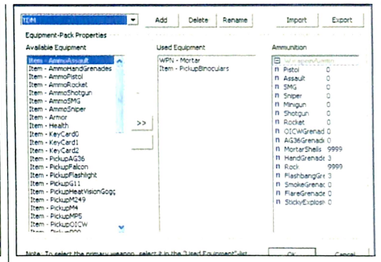
// DEAD TO THE WORLD
All the extra bits your can throw into Deathmatch levels.



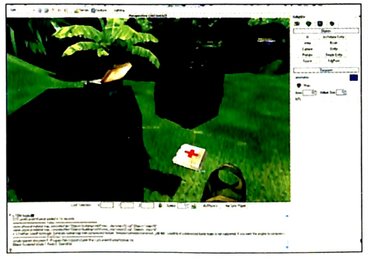
19 PAINTING ROADS
It might seem strange, but there's a problem running round off-road in *Far Cry* – it feels directionless. It also helps to have a clear idea of the layout of the map, where the pick-ups are going to be, and where the firefights are going to happen. In the **Texture** window create a layer called **Roads** and deselect **Auto-generate mask**. Click **OK** then select **Terrain ➠Layer Painter** in the **RollUpBar** (you may need to restart the editor to see this properly). Now, paint the road layer on to the map.



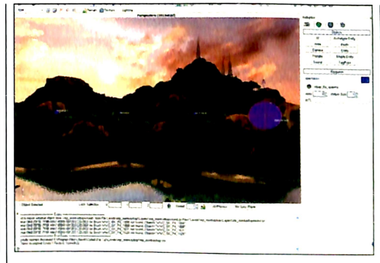
20 TEAM DEATHMATCH
To create a Team Deathmatch level, we need to create a new mission from the **Mission** menu called **TDM**. This will bring up a version of the map, layered and modelled as normal but missing all your cool objects. This simply isn't acceptable, so switch back to the **FFA** map (see step 1). Press **[Ctrl]+[T]** to bring up the object list, and click **Select all**. Now press **[Shift]+[Ctrl]+[S]** to save it out as an object, and switch back to our **TDM** map. Press **Shift]+[Ctrl]+[L]** and load your objects back in.



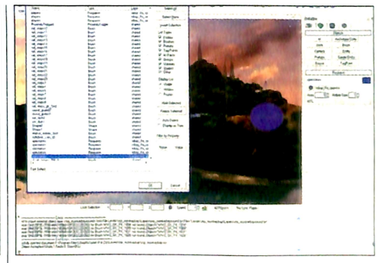
21 EQUIPMENT PACKS
Setting up Equipment Packs is simplicity itself, but it's essential for your men. First select **Mission ➠Edit Equipment Packs**. This window will be empty so click **Add** to create a pack. Now select the elements you would like your men to start with and move them to the middle column. Check that you have enough ammunition for them in the right-hand column. Now exit, then click **Mission ➠Properties**. Select **FFA** from the drop-down list, and click **OK**.



22 PICK-UPS
We need to put sufficient pick-ups around the map so everyone has a reasonable chance of finding a different gun pretty quickly. Go to the **Object ➠Entity** menu and click **Pickups**. Most of the items there are usable; only keycards and the like aren't. Select the entity, select the **Follow Terrain** and **Snap to Objects** options, and simply drag the entity to the map. You'll want to ensure that there are pick-ups about every **20 seconds** of running time, and you might want to group them for easy access, too.

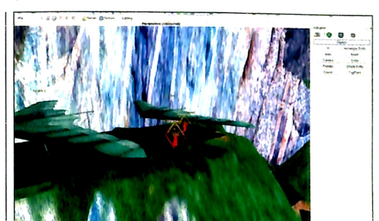


23 RESPAWNS AND SPECTATORS
Of course, we need somewhere for all our players to start, and just one location won't do. Click through the **Objects** menu to **TagPoint**, and select **Respawn**. Drag this repeatedly to appropriate locations on the map, renaming it to **Players** each time. Similarly, for spectators, use the exact same **Respawn** tagpoint, but rename it to **Spectators**. Drag these to suitable locations, and align them so that the users will have a good view of choke-points on the battlefield.



24 RESPAWNING ITEMS
Remember all those pick-ups we distributed before? And remember how we carefully grouped them? Well, if you go back to them and select them, we're going to set the respawn rate so these items will reappear shortly after they've been acquired. Select the group through the **[Ctrl]+[T] Object management** menu, ungroup it, then click on the **Entity Properties** panel, altering the **Respawn** time for all the selected units to **20 seconds**.

25 VEHICLE RESPAWNS
Vehicles, like weapons and other entities, can be dragged and dropped on to your map. Also like weapons, vehicles need to respawn after they've been moved or destroyed, but their method is more complicated. Select the vehicle from the **Entity** list and place it on the map. Now select the **Entity ➠Multiplayer ➠Phoenix** object, and place it near the vehicle. This is an invisible timer object that is linked to the vehicle and brings it back to its starting position when its On Death function is satisfied.



26 VEHICLE RESPAWNS II
We need to do some basic scripting to get these two to work together. Click on the vehicle and scroll down the **RollUpBar**, until you can see its **Scripting** properties. Click on **On Death** and click the **Pick New** box. With this box highlighted, click on the **Phoenix** object. Now repeat this for **On Abandoned**. Finally, select the **Phoenix** object and set its **Respawn** value under **Entity Properties** to a sufficiently low level; something in the region of **30 seconds** is average.

27 FIRST TESTING
Now, use **[Ctrl]+[G]** to drop into the game. Take a moment to simply wander around the map and find the flaws in your mapping. Is the map too steep, leaving you endlessly struggling and jumping up hills? Then dig out your terrain modification tools (**Modify ➠Reduce Range**) and get lowering. Have you left great gaping holes here and there? Smooth them out. Seems a little sparse? Pick up the **Vegetation** tool and fill in the gaps. A flawed map is simply one you've not played enough yourself.

GET DOWN, GET DOWN

How to get around in the *Cryteк Sandbox*.

A flying fox may sound like yet another exotic animal on *Far Cry*'s exotic shores, but it is in fact one of the simpler ways of moving about in *Far Cry*, inspired by the realistic physics engine. It's one of those pulley-slide jobbeys (no rubber chicken) that you dangle from by your arms to travel long distances. An alternative method of transport is the hang-glider. It allows you to circle slowly around a map, sniping away; hang-glider on hang-glider battles are truly hilarious. The humble ladder sneaks it at a third place (try to avoid tilting them as it messes up the ability to climb them). Finally, you could build in an elevator to the level and go both ways, if you're feeling a little more adventurous. (We weren't.)

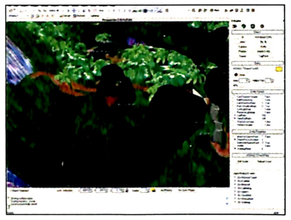
MAKING LIFE INTERESTING

Variations on a theme make levels last longer.

The Mission Properties settings have a lot of room for manoeuvre, and an imaginative user can make just about anything using these alone. Our final Team Deathmatch level removed everything but the Mortar. There's understandably no character animation for this, but having a long-ranged arcing weapon, very slow movement and no alternative makes for an interesting InstaGib variation, a bit like *Worms 3D*. On the other hand, a sniper rifle or rocket launcher match would be equally good, if slightly more straightforward. Equally frantic variations can be derived by setting low ammunition for common weapons, by dumping lots of fragile vehicles on to the map, or by making large portions of the map destructible through scripting.

// ASSAULT ON PRECINCT 13

Not strictly relevant that, but it's an Assault map, okay?

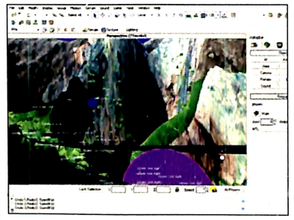


28 ASSAULT!

An ASSAULT map has attackers progressively assaulting three positions defended by the opposition. It has a strange *Team Fortress Classic* air about it, with three distinct classes, and allows player-built defences. The first thing when making an ASSAULT map is to create a new mission. Click on the blue plus button next to the word **FFA** and type **ASSAULT**. Follow the instructions in step 20 on re-importing objects, if you want to use the same ones as **FFA**.

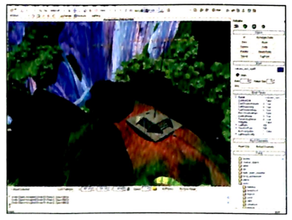
29 RESPAWNS

We need to set up different respawns to our FFA and TDM levels. Delete the current imported respawn points (you can leave your spectators). Navigate to **Objects➡Entity➡Multiplayer** and select **ASSAULTCheckPoint**. Place one of these models in the Attacker's base, and alter its properties so it is no longer visible and acts as a spawn point for the attackers. ASSAULTCheckPoints will serve as both spawns and checkpoints, and they'll convert this from an FFA to an ASSAULT map.



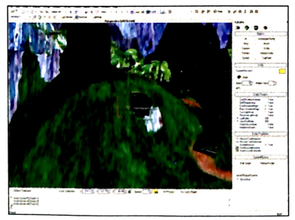
30 RESPAWNS II

Place three sets of these ASSAULTCheckPoints changing the **checkpoint number** each time to signify the objective each respawn point is aiming for. Now place defender respawns in exactly the same way. You want to give the impression of progression on the Attackers' part and retreat on the Defenders', so think about your placing. Remember to leave space for turrets, pick-ups and ammo dumps, as well as walls and gates, and especially for the objective checkpoints.



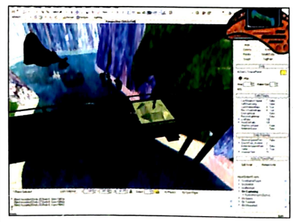
31 OBJECTIVE MARKERS

Once you have the spawn points set up, it's time to create the objectives. Place some **ASSAULTCheckPoints** where you want the objectives to be, and name them. The first objective should have its checkpoint number set to **2**, the second to **3**, and the third to **4**. Warm-up time should be set so as to allow defenders time to prepare at each checkpoint. Depending on the size of your map and how far the enemy has to run, this can be from 15 seconds to two minutes.



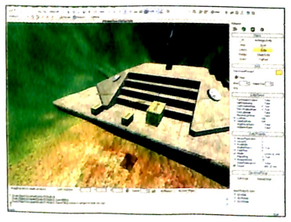
32 MISSION MARKERS

Key to the flow of the ASSAULT and to defining winners and losers, **Current Mission Markers** are clear empty boxes solely to do with scripting. Each ASSAULT map has four, numbered CurrentMission0 to CurrentMission3. **CurrentMission0** is placed in contact with the first objective (**Checkpoint_2**.) One, and only one, attacker's spawn point is given the property **On Spawn ➡CurrentMission0 (Active)**, which serves to trigger the first checkpoint as a target.



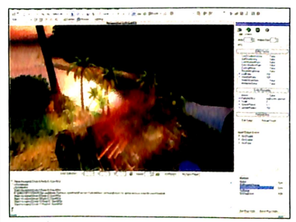
33 SETTING UP MISSIONS

Now the first objective should be given the property **On Spawn ➡CurrentMission1 (Active)**, and CurrentMission1 placed on the second objective. This will give a glowing beacon on the radar when Objective 1 is captured, showing players where to attack and defend. You can include separate messages to the Attackers and Defenders as each objective is taken. You can also include events, such as explosions or particle effects, triggered by the objective being caught.



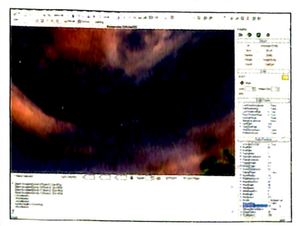
34 PICK-UPS

Again, pick-ups are different for ASSAULT. Because each of the classes has its own specialised weaponry, and because you can change weapons at any time by simply hitting the **[Escape]** button and suiciding, there isn't a selection of guns available for pick-up. There's just the usual armour, health, binoculars or night-vision goggles and a ubiquitous type of ammunition called a **ClassAmmoPickup**, which gives each person the ammunition he needs.



35 PARTICLE EFFECTS

You may also want to make a flare or explosion occur when an objective has been taken, to emphasise the fact. Do this by taking a **Particle** entity from the **Objects➡Entity** palette and placing it above the masthead of the objective. Type **explosions.flare.a** in the **Entity Properties➡Particle Effects** box. Then click on the objective, select **On Spawn ➡Pick New** and click on the particle effect. Right-click **Disable** and select **Pulse**. Click **Send** to test the effect.



36 BOIDS

A nice atmospheric touch, which isn't too much of a drain on your computer's processing power, is to insert some **boids** – that is, automated birds. Or fish. Or bugs. These critters spawn from a specified point and explore a given area. You can alter their size, you can vary how many of them there are, but far and away the most fun thing you can do with them is to get them to follow the player. Combine this with a damage area and fish, and you have piranhas.

// SERIOUS OBJECTIONS

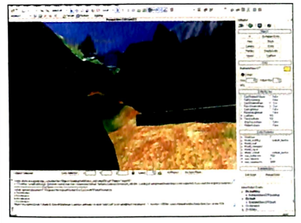
Don't ask why there's a rubber duck – we don't know!

37 BUILDABLE OBJECTS

A vital component of many ASSAULT maps, especially larger ones, is buildable objects. On a map of the scale we've created you don't need many, but we're going to put a few in as a demonstration. To create one, first drag and drop a **BuildableObject** from the **Others** directory of the **Entity objects** list. This will be the base that the engineer will build the object from. And, yes, it is a duck. When you've changed the model files it will become a trapezium with blueprints on top.

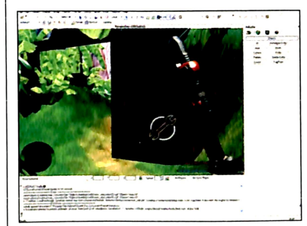
38 CREATING THE MARKER

Let's make a simple gate for our first object. Import the **Gateframe** brush from **Outdoor➡Barriers** and place it near the BuildableObject. Assign the **unbuilt_gatewood.cgf** model (found under **Objects ➡Multiplayer➡Buildables**) to the **model_building** and **model_unbuilt** properties of our BuildableObject, by clicking on the folder icons in the **Entity Properties** pane. Now set the BuildableObject's **Initial state** to **0**, so it looks like a trapezium with blueprints on it.



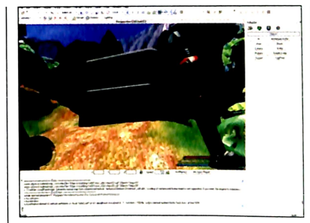
39 THE ACTUAL GATE

Give the first BuildableObject a reasonable amount of build-points and repair-points (but no hit points.) Next create another BuildableObject, to be one of the actual gates. Assign this all the appropriate **Gatewood** files, except for **model_unbuilt** – leave blank. (For example, **model_repair** has **gatewood_destroyedb_repair.cgf** as its model.) Then set all the second BuildableObject's **health**, **build** and **repair points** to a high number (in the thousands), and its **Initiai state** to **0**.



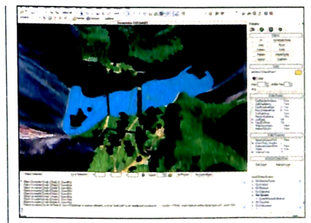
40 LINKING THE OBJECTS

Link the two by clicking back on the first BuildableObject (the block with the plans on it) and scrolling down to the **Scripts** section. Click the **On Building** tag, then **Pick New** and select the second BuildableObject, the gate. Repeat this with **On Built**, this time right-clicking on the word '**building**' in the **On Built** command line, to change it to **Built**. If you drop into the game now, you can test out building the gate (assuming you've assigned the Engineer's spanner to all the troops).



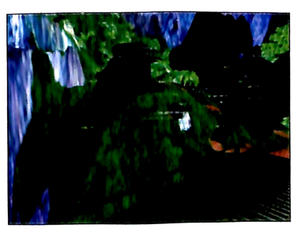
41 HOOHAH AND BUNKUM

Similarly, a bunker consists of two BuildableObjects: the plans and the bunker itself. It's put together in the same way as the gate, with the exception that the bunker itself has a **model_unbuilt** value of **bunkersmall_base.cgf** or something of that ilk. This provides the model with a solid concrete floor, so it doesn't appear the bunker is appearing totally from nowhere. Otherwise, it's the same (despite some of the larger bunkers having fixed weaponry).



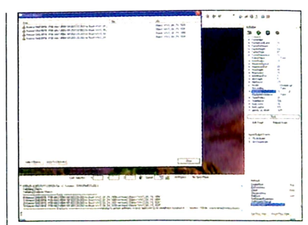
42 DAMAGE ALLOCATION

All these objects are destroyable and repairable; you can alter just how tough they are to knock down or build up by playing around with their health points and repair points. In fact, you can assign damage properties to several different types of object, although you can't alter the structure of birds or most entities. It's worth testing out just how your traps are working by clicking the **Physics** button, which will simulate how the game would start.



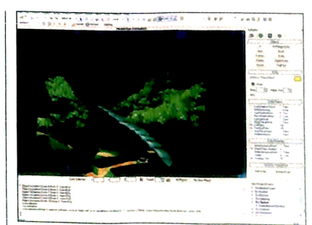
43 NO ESCAPE

Players of *Theme Park* may remember the horrors of losing a customer in the midst of your park. Mapping for *Far Cry* can be like that. If a player wanders out of the designated play area and gets lost in the myriad islets, it's no fun for them. There are three solutions to this, the first two of which we've employed in our map: a volcanic-style island, so there's no way out up the steep chasms; large rocks and steep slopes; and blocking areas to stop players moving through.



44 TRYING THE LEVEL

To get the level ready for a play-test, you need to regenerate the textures. Before this, though, go through the **Reload** options under the **Tools** menu. These reload, albeit in a ham-fisted fashion, the geometry, textures, terrain and lighting of the map. Go to **Tools➡Check level for errors**. If any problems crop up, ask yourself if you need that particular instance of the object; if not, the easiest fix is deletion. Otherwise, select the object, go to it, and see if the problem is obvious.



45 EXPORTING THE LEVEL

Now generate the terrain and, finally, go to **File➡Export to Engine**. This will prepare the level for use in *Far Cry*. Boot up *Far Cry* and, at the main menu, bring up the console by pressing **[`]** (underneath the [Esc] key). Type **\map name** where 'name' is the name of your map, and away you go. Alternatively, load it up by creating a multiplayer server, then selecting it as usual from the drop-down boxes on the right of the server-creation window. Go on, give it a play!

SPEEDING UP EDITING

How to get started with mapping more quickly.

After your first time making a map, there are several useful things you can export that will speed up editing next time. First off, in the Layers section click File➡Export Layers, and save it to your generic Levels directory. Next time you start a level, you can import this and tweak from it; it'll give your levels a theme and saves you selecting lots of new detail textures and altering their X-Y scale. Next, you can save out your vegetation groups – this is in the RollUpBar's Terrain➡Vegetation section. You can also export objects, or groups of objects. So that bridge, fort or rocky arch you slaved over until you got it just right, can be exported. Select the object or group and click Modify➡Save Object(s) (you can also click [Shift]+[Ctrl]+[S]). On your next map, you should be able to import the object with a quick [Shift]+[Ctrl]+[L].

SERIES GUIDE

Next month we show you how to create a singleplayer mission, incorporating indoor elements. We'll show you the basics of enemy AI, indoor modelling plus get to grips with starting and ending missions.

PART ONE

savage 3ds max character tutorial

Concept render of a potential *Savage D-day Assault* environment. The *Savage D-day Assault* mod will feature ruined buildings, Normandy bunkers, tanks and 8 different playable characters.

Serguei Kalentchouk is a young, talented artist. At just 17, Serguei has worked on his fair share of game modifications, including the popular *Red Orchestra* for *Unreal Tournament 2003*. Serguei currently works as a Character Artist at Digital Jesters.

DIFFICULTY HARD

TIME TAKEN 8 HOURS

WHAT YOU NEED... 3ds max, patience, maybe other people, but not a copy of *Savage*

HOW TO ADD A WORLD WAR II MODEL TO THIS NEW AND AWKWARDLY ACRONYMED FPS/RTS.

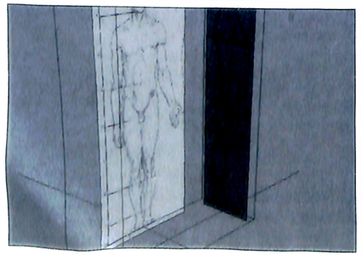
Savage, an online shooter-strategy hybrid, might not seem to be the best game for modding, but it's surprisingly simple. The Silverback engine allows for high polygon counts to be displayed in-game, without bringing your PC to its knees. *Savage* utilises the creative powers of Discreet's *3ds max* software to open up enormous modding opportunities to its gaming community. A *3ds max* exporter plug-in is available, so prospective modders can straightforwardly ouput unique *Savage* character, prop and building designs.

This tutorial guides you through the initial steps of character creation currently in progress by the *Savage D-day Assault* team. The *Savage D-day Assault* mod focuses, oddly enough, on WWII, providing an ideal medium to mix RTS and FPS in this ever-popular era. This series of tutorials will guide you through the process of making a mod, documenting real, ongoing developments. We'll cover character creation and character animation in this tutorial, and map making, building and prop construction in the next. Basic 3D skills and knowledge of *3ds max* is recommended.

The *Savage D-day Assault* team consists of: Patrick van Barneveld – 3d Modeler and assistant producer; Serguie Kalentchouck -3d Modeler; William Todd Ward – 3d Modeler; Ron Chow – sound FX; Bill Munk – Animator. The team will give you a rough guide to what they're up to and how they're progressing on this ambitious and much-anticipated mod.

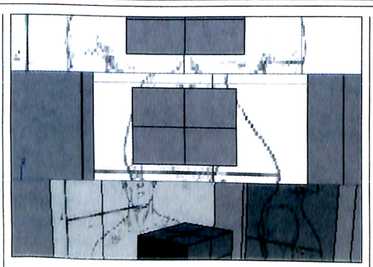
// A DESIGN FOR LIFE

How to get started on a character model.



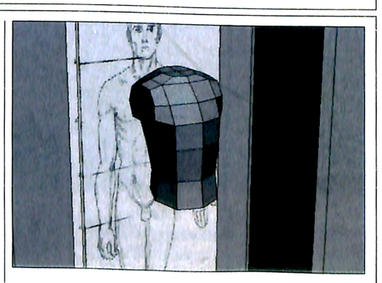
01 LET US BEGIN

Perhaps the most important part of character development is finding suitable reference images. In most cases you'd already have pre-made concept art sketches or be required to produce them yourself, but in this instance, simple drawings of a male figure will suffice. The references are placed on two planes, positioned as above. This determines the layout of your character model.



02 MODELLING THE TORSO

The method we'll be using is simple box modelling. Everything starts with a box primitive. Position it correctly, matching it up with reference images in side and front views. Note: the number of segments you assign to the box initially will determine how detailed the torso is. The Silverback engine allows characters of around 2500 polygons, so massively-detailed models are possible.

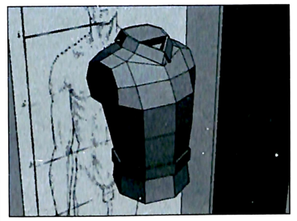


03 FIRST STEPS

Slowly, our box begins to take the shape of a body. Its vertices have been manipulated to further fit the reference images, and extrusions are made to form shoulders and the abdomen. The torso is extremely important as all animated extremities attach to this and are dependant on a good alignment. This is the centrepiece of your model, so take your time on this one.

// BODY PARTS

The shin bone is connected to the knee bone, and so on.

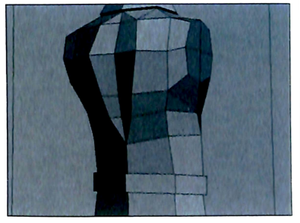


04 DETAILING.

Now that the rough shape of the torso is defined, you can start to add some interesting detail. Since we are modelling a bloke wearing an army uniform, it makes sense to start off with some clothing details. Belt-making tip: select an edge loop where you want the belt to be positioned, chamfer the edges by an appropriate amount and extrude the created ring of polygons.

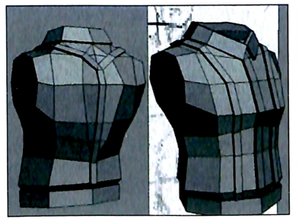
05 DEFINING THE CHEST

You can see that his torso still looks like a deformed cylinder. To fix this, we need to further define body features, like the chest and back. Looking at the model, you'll notice that to do this we need to create new edges to work with. This is where the Cut and Connect tool becomes very useful. After defining the chest, the torso takes on a far more human shape and appearance.



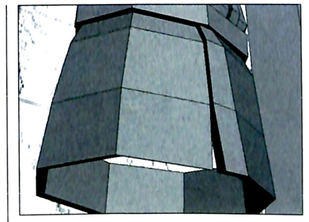
06 SCULPTING THE BACK

When defining the back, we used a cut to create new edges that make up the shoulder blades, and then gave them volume by manipulating the vertices. Learning to use Snap tools will help create neat and precise cuts. The back of the character is often overlooked, but it adds to the overall realism of the model and is a must for accuracy in all aspects of good game character modelling.



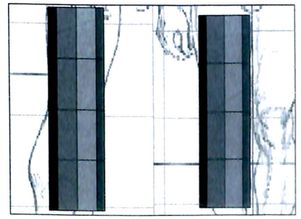
07 CREATING THE STRAPS

Creating the shirt straps is delicate, as they increase the poly count. The method we used was to cut the polygons where we wanted the straps to lay. Next we chamfered those newly created edges and extruded the in-between polygons. Lastly, we detached the straps to a separate element, and restored the previously cut polygons. This is where the model and torso finally begin to look like the authentic uniform of a German soldier.



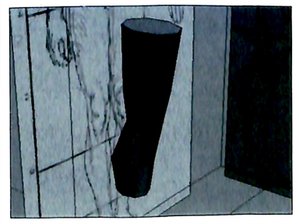
08 THE LOWER TUNIC

We deleted any excess polygons below the belt in preparation for modelling the lower part of the tunic. To do this, simply select the edges that make up the opening in the lower torso and **[Shift]**-drag them down. You will notice new polygons appear as a result. Keep working on it until you get the desired effect. This may take a few attempts but the overall result is well worth the extra time you might have to put in.



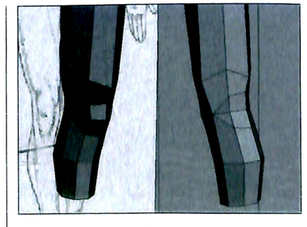
09 LEGLESS

Time to start on the legs. Instead of a box, a cylinder primitive was used here, as it resembles the body's natural anatomy. Choosing the right number of sides and segments you want is very important, as it will have a direct result on the amount of detail and the number of polygons at the end. We recommend using an eight-sided cylinder for each leg, as it adds more flexibility in later character modelling and animation stages.



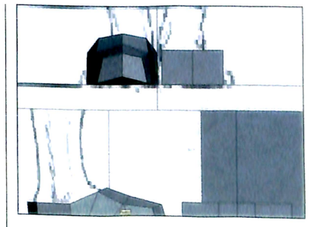
10 ROUGH SHAPE

Just like we did with the torso, we need to manipulate the cylinder into the rough shape of a leg. Once again, make sure to check both reference images when you are modelling. Notice that the centre segments are aligned directly with the knee. An anatomy book or a picture showing how a real leg looks and moves is advisable for this step. Legs are complex bits of kit after all, with those bending joints and connections to torso and feet.



11 KNEES-UP

The thing to remember when modelling a character is that it will have to move: body parts need to bend, twist and rotate, so pay close attention to joints such as knees. There are a few ways to achieve good deformation, the above picture illustrates just one method that works well. A triangulated mesh adds to the flexibility, as the vertices align better on deformation. Don't skip this bit – how can a man crouch if he has no knees?



12 BOOTS MADE FOR WALKING

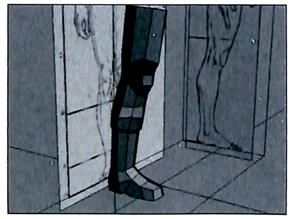
Once again, the magic starts from a simple box. You can see that with just a little manipulation, it starts to take the shape of a boot. Anatomically, the feet are very complex, although simplified in game character models. The feet move independently from the legs, and are extremely important for a humanoid character, especially if you want to ensure the model has fluid, well-animated walking movements. Again, spend some time on this.

MEET THE TEAM

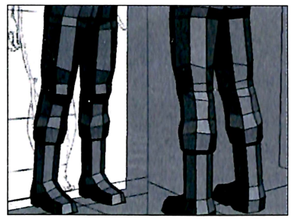
Here's how we know the men that know.

Patrick van Barneveld is the assistant producer of *Savage D-day Assault* and an employee of Digital Jesters, the European distributor of *Savage*. He has nine years of experience in 3D animation, CAD and 2D artwork. He has worked on many games projects.

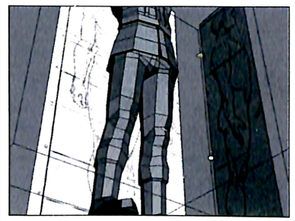
// ANIMATION CELEBRATION
Joining the joints for fluid movement.



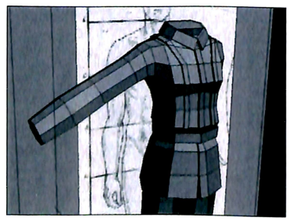
13 MORE LEGS
Now that the boot is ready, we need to attach it to the rest of the leg. Don't forget to weld the vertices after attaching. Extra edge loops have been added to define some folds and volume to the trousers. We would also suggest giving the leg a little bit of an incline so that the legs are spread out at the end. Suddenly the lower part of your own little man is complete, and your leg looks anatomically ready and waiting for character animation.



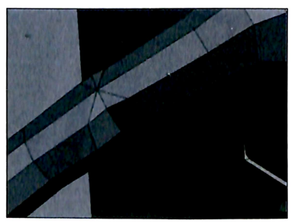
14 MIRRORING
We're happy with the leg, but, of course, we need another one. All it takes is a Mirror tool. We recommend you choose Instance in the close selection option if you are planning to do any further work on the object. This will make sure that all the actions you carry out on one part of the body are mirrored to the other: extremely useful for future tweaks or additions to your model. The mirror tool is a modeler's best friend.



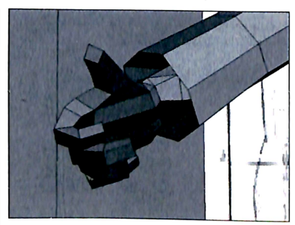
15 ALL IN ONE
It takes careful and tedious work to model the hip areas. Once done, we can attach the legs to the torso. Check your reference picture and anatomy guide to make sure you end up with something realistic. So, we wanted two legs and a torso, and now we've got 'em: your set-up now resembles a human being. This is a crucial stage; save your character model as a backup before you do anything else.



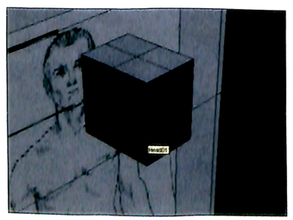
16 MODELLING ARMS
Modelling arms is also a delicate process, because we need to make sure our shoulders deform correctly during the animation. This can take time and anatomical references should be consulted – you want the model to hold a gun correctly, after all. Even though our reference shows the arms lowered, it is best to keep them raised. *Character Studio*, which we'll use later, prefers models with raised arms.



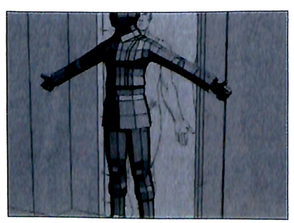
17 ELBY-BONE
Again, it is extremely important to pay close attention to the elbows, as these will need to bend and twist accurately. The picture above shows one way of pulling this off – it's similar to how we made the knees. A triangulated mesh adds to flexibility as the vertices align better on deformation. A human character needs fairly realistic bending elbows, due to the number of actions which rely on this body part.



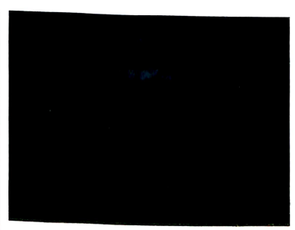
18 THUMBS ALOFT
This is always tricky. Due to the limitations in the poly count, hands are usually neglected and they can end up looking very boxy. When modelling hands, we would suggest you find a very detailed reference image to follow. Weapon animations, for instance, depend on the hands. Think about the way your own hand works; visualising this will help you understand the best way to model an anatomically correct character.



19 HEAD HELD HIGH
It's safe to say that the head is the hardest part of the body to model; it takes a lot of practice and patience to achieve the desired result. A box is used as the initial shape, and facial features will be extruded from here to make the face appear genuinely human. The modelling involved is extensive and often time consuming. There are no right or wrong ways to make a head, as it's all a question of what you've visualised as your ideal result.



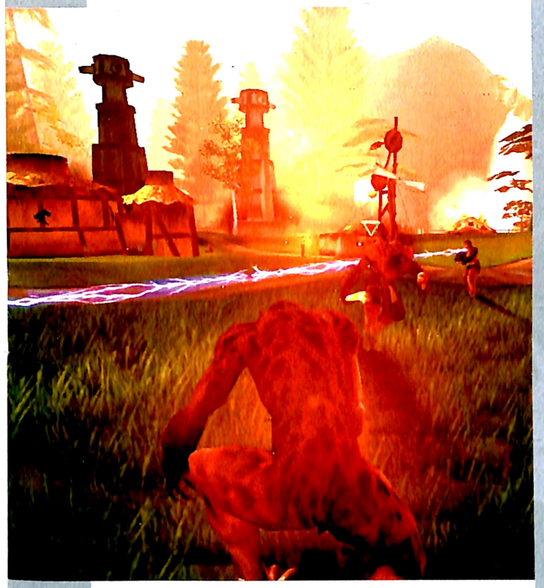
20 FINAL FINISH
So there you have it. We hope we were able to introduce and walk you though some basic and general steps that are involved in character modelling for games. The above picture shows a generic German WWII soldier character model in early development stages; this tutorial should give you an idea of the methods used in modelling in *3ds max*, for *Savage* or for other games. Of course, now the character needs to be animated – which is a whole new story.



21 A COMPLETE 1944 US SOLDIER MODEL, BY WILLIAM TODD WARD.
This 2500 poly model offers highly realistic features and takes full advantage of the Silverback engine and its rendering capacity. This base model will further be adapted for a WWII-era US officer, sniper and medic, thus covering all of *Savage's* player classes. Character and weapon animations will make this a realistic portrayal of one of the brave men who fought/died in 1944. Honest.

NEXT MONTH
How to make maps for your models.

The *Savage* team will take you through the basics of putting together a proper multiplayer map for *D-Day Assault*.



WIN £1,300* AND 5 GEFORCE FX!

DESIGN YOUR OWN SAVAGE MOD! GET THINKING AND BECOME OUR GAMEMAKER OF THE YEAR!

Gritsoft publisher Digital Jesters is launching a competition to find the hottest new game-making talent out there, with a unique mod-making contest held in conjunction with NVIDIA and *Gamemaker*.

The competition centres around *Savage: The Battle for Newerth*, which itself is an evolutionary game, uniquely marrying the first-person-shooter genre with the resource management and hierarchy of a real-time strategy game, and garnering admiring reviews across the board. There's €2000 up for grabs for the winning individual or team, along with five NVIDIA GeForce FX cards for the winner or winning teams.

Savage is a multiplayer-only game of brutal combat in which teams of up to sixteen players battle against other factions. Each team comprises fifteen warriors who battle from a first-person perspective and one third-person commander who builds bases and weaponry and issues tactical advice to his side. It's this fusion of styles that has created a fanatical US community, which has been enjoying *Savage* since its release there late last November. *The New York Times* has described it as "the most innovative game of the year", and we have to say we're really rather impressed by it too.

To get your modification juices flowing, European gamers will be treated to a special bonus pack, which contains a host of new maps and mods for *Savage*; these illustrate the real diversity acheivable through modifying the original game engine.

To enter the competition, simply head to **www.savageeurope.com/index.php?page=modcomp.html**, where the necessary tools are available for download. Additionally, hints and tips will be available in the modding tutorials in this and next month's issues of *Gamemaker*. Further inspiration can be found on the *Savage* forums at www.savageeurope.com/forum/

All entered mods will be available for download on *Savage* Europe servers to allow *Savage* fans to play on a new field of battle. Once submissions are closed, judges will select the best mod, and award the prizes to the winning mod team. Submitted mods will be judged on the following criteria: a) Originality b) Balancing and c) Playability.

There are some huge prizes up for grabs, so really get those creative juices flowing!

Savage: The Battle For Newerth on sale now, priced £29.99. For more information, visit www.savageeurope.com.

* Approximately – the prize is €2000, which at the current exchange rate is about £1,300.

Digital Jesters

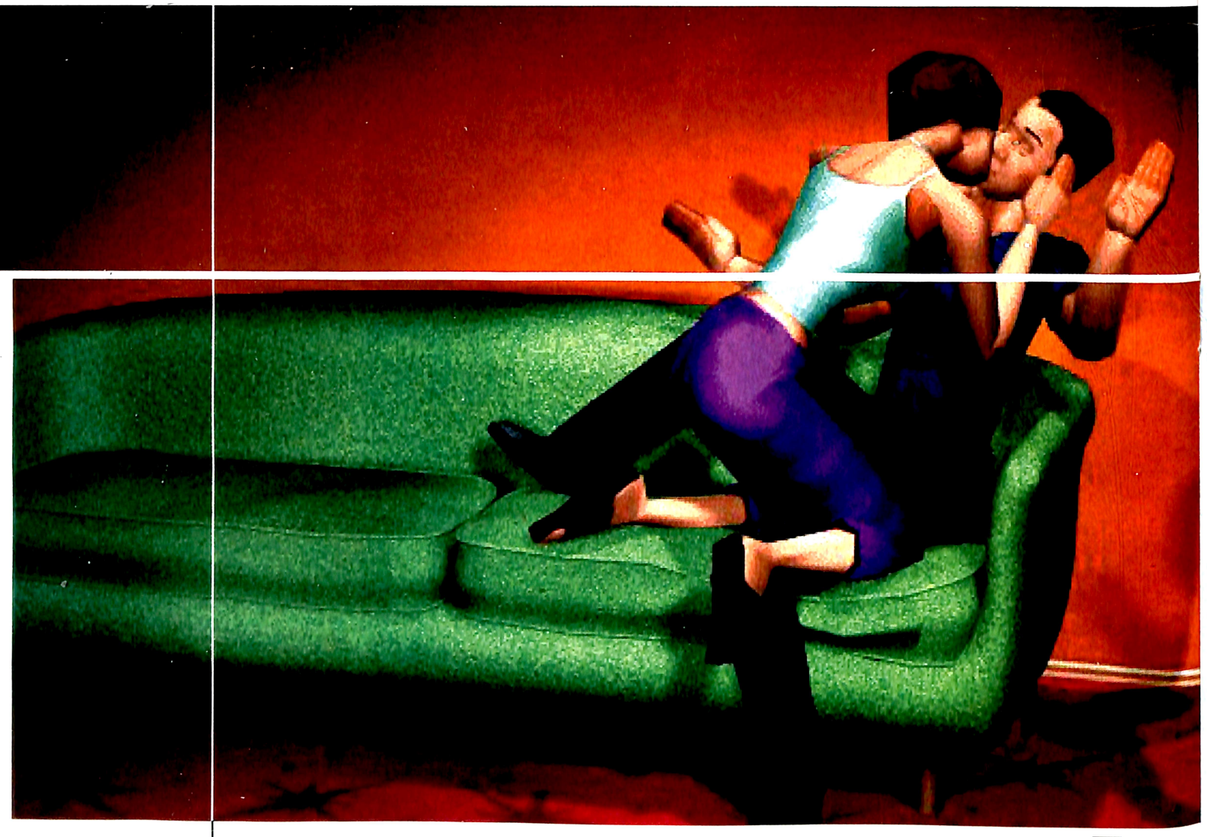
GAMEMAKER

NVIDIA.

HOW TO ENTER

To enter the competition, head over to www.savageeurope.com. You'll find the rules and regs, plus all the tools you'll need to get started, up there. The competition runs until 31 July 2004.

The winning mod will be chosen based on its originality, balancing and playability and all entries will be available for download from www.savageeurope.com. Once mod teams have registered, the required tools will be sent to the mod teams, either by email, FTP or direct download. Be sure to have a careful read of the Savage tutorial in this month's *Gamemaker* – there's a second part next month, plus you'll find a load of essential apps on the coverdisc. More detailed and specific advice can be found on the *Savage* forums – the game's developers are frequent visitors, and can help you out if you've got a query. First up, you'll need a team of co-modders – again, try the *Savage* forums as a recruitment board. Full terms and conditions can also be found on the site.



Getting arty

PART TWO

HOW TO ACHIEVE A SIM ART RENAISSANCE WITH THE HELP OF *THE SIMS TRANSMOGRIFIER*.

If Leonardo da Vinci played *The Sims*, would Bella Goth's face be peering out of the canvas wearing that enigmatic smile? Would he base the Vitruvian Man on Bob Newbie's physique? Rather than be left with that appalling thought, imagine what his neighbourhood would look like. In place of seedy bars and nondescript malls, museums, cathedrals and art would grace the downtown area. It would be a virtual golden era for art in Sim history. If you find this scenario inviting, you can make your own paintings using *The Sims Art Studio* http://thesims.ea.com. The program is straightforward, but limited to one-tile paintings and a few styles of frames in varying colours. For larger frames, you need to clone and recolour an existing painting. If your art doesn't fit into any typical category or shape, you need some cloning skills to make your new object. For now, Master da Vinci is satisfied with a large two-tile reproduction for his new museum. All we need is *Photoshop*, *Transmogrifier* and a small electronic reproduction of any painting.

Riane is former webmaster and creator for Accents http://simaccents.com. She has been active creating skins, accessories, meshes, decorative items and a few other game oddities for two years, and is currently enjoying early simming retirement in Manila.

DIFFICULTY INTERMEDIATE

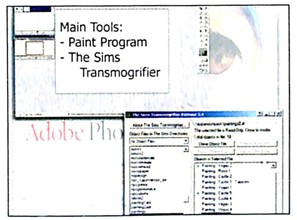
TIME TAKEN 2 HOURS

WHAT YOU NEED...
An image editing program, *Transmogrifier*, *The Sims Menu Editor*, *Animation Alchemist*

ON THE DISC

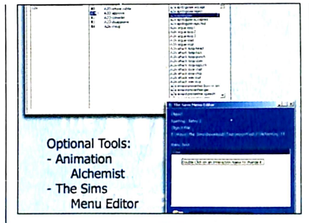
// PAINTING BY NUMBERS

How to recolour multi-tiled objects.



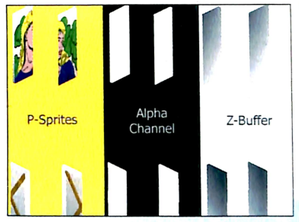
01 BASIC TOOLS

The basic tools you will need for object making or recolouring are *The Sims Transmogrifier* www.lushcreations.com and an image editor, such as *Adobe Photoshop*, *Paint Shop Pro* or any other program that supports layers. You will need *Transmogrifier* (nicknamed *Tmog*) to extract the graphics needed for modification, while the image editor is required for editing the graphics. We will be using *Adobe Photoshop*.



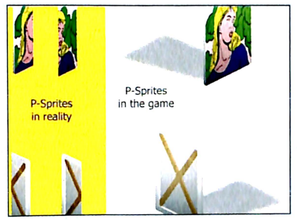
02 OPTIONAL TOOLS

There is a huge variety of user-made programs for altering an object's behaviours. There is a list of programs at www.thesimsworkshop.com but for this tutorial we will change the animations and vary the menu linked with the object. You can download *Animation Alchemist* www.simstools.com for altering the animation and *The Sims Menu Editor* http://thesims.ea.com for modifying the menu.



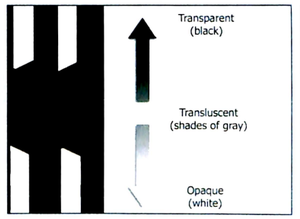
03 OBJECT BASICS

Sims objects are, in reality, two-dimensional, isometric pictures of an object taken from four points of view: North East, North West, South East and South West. Each time you rotate the camera, the game shows you one picture from one point of view. One object comes with a P-Sprite, alpha channel, Z-Buffer and an XML file. The XML file contains information on the object's contents and the role they play.



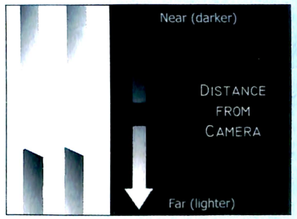
04 THE P-SPRITES

The P-Sprite represents one tile in one point of view for one object. This is the object as you will see it in the game, sans transparencies. Objects occupying more tiles will have more P-Sprites, while objects that look similar or mirrored in two or more points of view can have fewer sprites. These P-Sprites are in 256-colour, bitmap format – similar to the skins format.



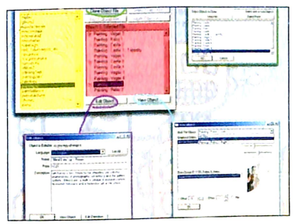
05 ALPHA CHANNELS

Each sprite comes with one alpha channel. The alpha channel determines parts of the object that are transparent, like glass. The darker the alpha channel is, the more transparent that area on the object will appear on the game. A white alpha channel is an opaque section of your P-Sprite. When you are planning to edit alpha channels, convert them to greyscale mode, not RGB.



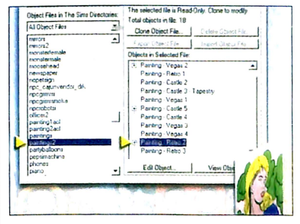
06 THE Z-BUFFER

The Z-Buffer aids the game in establishing the depth of an object. Remember, the objects are in 2D. How will Bob Newbie know how far to move around the object? When a section on the object is further from the point of reference (the game camera), it will have a lighter colour on its Z-Buffer. Like alpha channels, always convert to greyscale when editing.



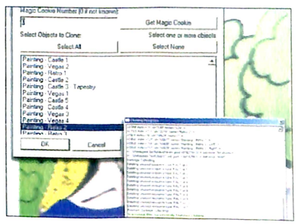
07 TMOG RUNDOWN

Transmogrifier is used for extracting the graphics needed for recolouring or making new objects. The individual object files can be found in the right window (pink), contained by the general object files (yellow). You can clone an object for exporting and editing (the lime green window). The Edit Object button (magenta) enables object definition editing, while the View Object button (cyan) gives a preview in all views.



08 PLANNING STAGE

Right, now we can get down to business. First, you need a picture of the painting that you want to recreate. We plan to make an enormous reproduction of Edgar Degas' *The Dance Class*. Open up *Transmogrifier* and scroll through the objects until you find a painting with the same shape that behaves in the same manner as your planned painting. Let's use the large, two-tile **Painting - Retro 2** from *Livin' Large*.



09 CLONING OBJECTS

Select the object and click on **Clone Object File**. Place the filename for your new painting in the Cloning window that appears. If you're not planning on publishing your work on a website, you can use **0** for the **Magic Cookie Number**. Click **OK** and the Cloning Progress window will appear, showing the stage cloning is at. Click **OK** again when the 'Transmogrifier Successfully Finished Cloning!' message appears.

NON-EDIBLE MAGIC COOKIES

Can we, at least, get our three wishes with those cookies?

Magic cookies are like ID cards for the objects. Instead of Clarence's Chair, the game recognizes the object as 86C2B081. Each object's magic cookie needs to be unique from the other. If the game finds two objects with identical cookies, the game can keep one object out and let the other object in the game or, worse, the game simply gives up and exits to your desktop. Most creators that publish their objects on the internet use a magic cookie that is issued from www.lushcreations.com to prevent their objects clashing with each other. Gluttons need not apply. One cookie is issued per creator to make way for a few hundred object makers around the world.

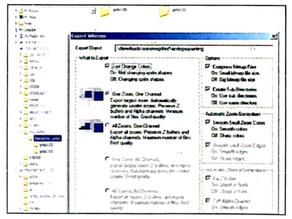
THE SS SIMPLORER

Boldly go where no Sim has gone before...

Some creators use the game's camera to make preview pictures of their objects, while being used inside the game. If you're feeling a little lazy and want to make instant snapshots of your objects, you can use *Simplorer* www.thesimsworkshop.com. It works like Windows Explorer, except that there is a preview for your walls, floors, roofs and object files. Making the screenshot is as simple as clicking on the Save icon – the program saves a screenshot for you in 256-colour, bitmap format. This file format might not be recognised by your website's free host, therefore we suggest you change the file format to GIF or JPEG before uploading.

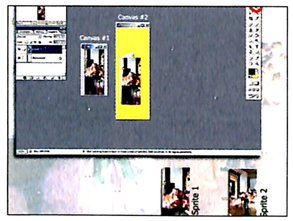
// GRAND DESIGNS

It's time to hang your masterpiece on the wall.



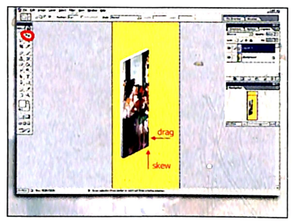
10 EXPORT THE CLONE

After cloning, select your cloned object and click on **Export Object File**. An Export window will appear. Since we are only recolouring the clone, select the **Just Change Colour** checkbox. For simplicity (and your sanity!) select the **One Zoom, One Channel** radio button. The program will create the other zooms. Click **OK** and select the folder where you want to keep the sprites.



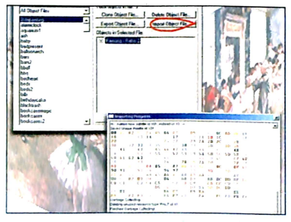
11 SPRITE PREPARATION

Since this is a two-tile object, the painting is divided into two parts. Open your picture in your image editor (we're using *Photoshop*) and cut it in half. Starting with the left section, open the sprite containing the left-front section in *Photoshop*. Change the **Colour mode** of the sprite to **RGB**. Using the **Move** tool (circled red), drag your half-picture to the canvas containing the sprite.



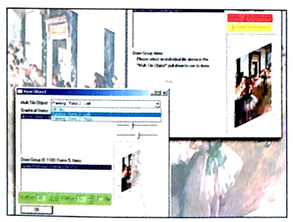
12 DISTORT AND SKEW

Once the picture is in the sprite's canvas, use the *Photoshop* **Move** tool to resize the picture. You can either use **Edit ➡Transform ➡Skew** or **Edit ➡Transform ➡Distort** to align the picture with the painting's isometric view. Save it in PSD format, to a different folder. Next convert the P-Sprite into 256-colour, bitmap format and save this inside the **Sprite 1100** folder.



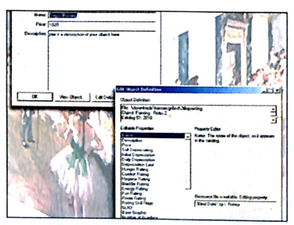
13 IMPORTING OBJECTS

Repeat steps 11 and 12 for the right-hand side of the painting, but save the new sprite in the **Sprite 1101** folder. Go back to *Tmog* and select your cloned painting and click on **Import Object File**. Select the cloned file's XML that you exported earlier and choose **Open**. A Progress window will appear. Click **OK** after *Tmog* announces that the painting has been successfully imported.



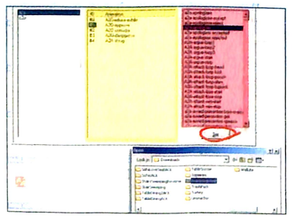
14 VIEWING OBJECTS

View your work using **View Object**. You can examine the object in different zooms and views (highlighted peach and yellow), and inspect if the left side is aligned with the right side. If not, you can edit the PSD files you saved earlier, and repeat steps 12 to 14 until the two sides are aligned. Adjust the object's **x-y placement** (highlighted green) in the **View** window.



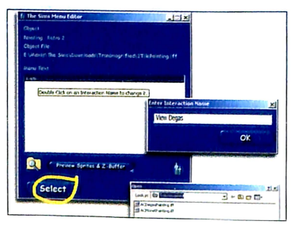
15 EDIT DEFINITION

Using the **Edit Object** button, you can edit the object's description, name and price, as you want it to appear in the game. For in-depth object definition editing, you can click on the **Edit Definition** button in the **Edit Object** window. However, Edit Definition cannot alter an object's behaviour. You need other programs for editing behaviour, in order to make highly modified objects.



16 ANIMATION EDITING

We can use *Animation Alchemist* to change a few animations associated with the object. Open the program, select **File ➡Open** then choose your new painting from the **Downloads ➡Transmogrified** folder. Choose the animation you want to change in the centre window (yellow) with the animation you want to use from the right window (pink) and click the **Set** tab. Then select **File ➡Save**.



17 MENU EDITING

You can also edit the pie menu that appears when the object is selected. Open *The Sims Menu Editor* and click **Select**. Find your object file in the **Transmogrified** folder. Once it's loaded, the menu can be viewed from the main window. To change the words on the menu, double-click the text you want to change and type the new text in the new window. Click **OK** then **Save**.

18 THE FINALE

Your painting is finished and in place. Open your game and you'll find the new painting under **Decorative ➡All**. If the placement seems a little off-centre, simply open up *Tmog* and adjust the x-y placement. If you want wider paintings, you can clone three-tile paintings from *Hot Date*; the only difference is that you'll need to perform steps 11 and 12 three times.

NEXT MONTH

We show you how to play Doctor Frankenstein and conjure new body shapes for your Sims by creating and editing body meshes.

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MAKE A SIDE-SCROLLING SHOOT-'EM-UP GAME IN LESS THAN AN HOUR USING *THE GAMES FACTORY*.

PART TWO

Welcome to our second tutorial on building a game using *The Games Factory*, courtesy of **Clickteam.com**. This month we're creating a side-scrolling shoot-'em-up game, similar to the old *Defender*, but with much better graphics. If you have never used *Games Factory* before, we suggest you take a look at last month's *Chocobreak* tutorial in PCF 160. You can also download the tutorial from www.clickteam.com/pcf160.zip. This month, we will assume you understand the fundamentals of Games Factory: how to enter a new condition, how to enter an action, and so on. You can learn these from the *Chocobreak* tutorial.

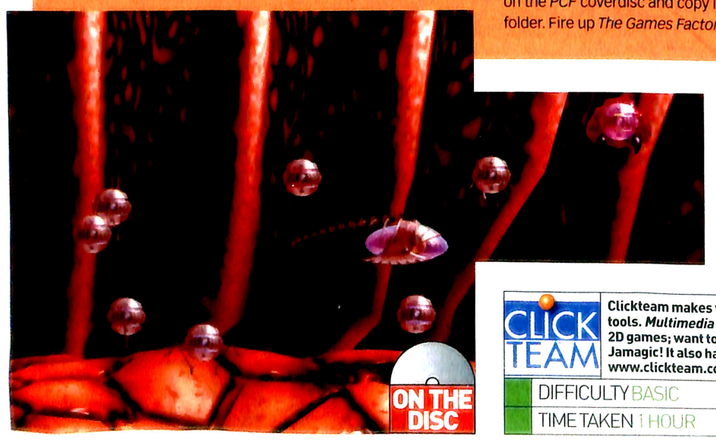
Before we start, we need to copy the library of graphics into the Games Factory folder. Locate the file **nano-war.gam** on the *PCF* coverdisc and copy into your Games Factory Libs folder. Fire up *The Games Factory* and you're ready to roll.

LEARN MORE

Let's be honest. You won't learn all you need to know about *The Games Factory* in one article. So if you need to learn how to add extra lives, a scoreboard or a main menu, you can download an extended article at www.clickteam.com/pcf161.zip. You can also get help and support at the Clickteam forums which are located at www.clickteam.com.

NEXT MONTH

We will continue this game, add the collision detection between the laser and the alien ship between the player and the aliens, and then complete the game.



In this clone of *Defender* you have to destroy all the enemies – and make sure they reach the top of the screen or they will mutate into heat-seeking aliens!

CLICK TEAM

Clickteam makes various other game/application tools. *Multimedia Fusion* allows you to make great 2D games; want to try 3D and scripting? Try Jamagic! It also has a range of installers. Visit www.clickteam.com for more information.

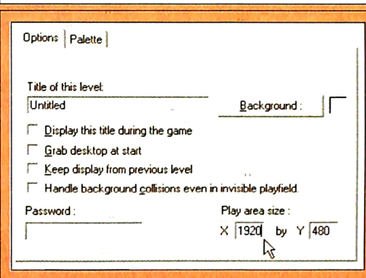
DIFFICULTY BASIC

TIME TAKEN 1 HOUR

WHAT YOU NEED...
A copy of Games Factory Pro (see coverdisc.)

// PREPARE FOR WAR

If you can't beat 'em... er, you've lost.

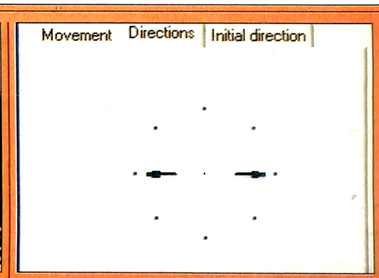


01 SET UP THE LEVEL

In the **Storyboard Editor**, click on the **big 1** located on the left of the empty level. This will open the **Level Editor**. The first thing we need to do is to enlarge the width of our level. In the main menu, select the option **Edit ➡ Level Setup**. In the following dialog box, enter the new size in the **Play area size section: 1,920 x 480**. As you can see, this new size is then immediately shown up in the **Level Editor**.

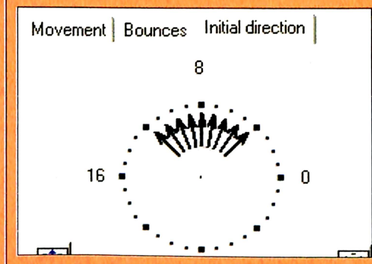
02 DROP THE OBJECTS

Open the **Nano-War library**. The objects are on the left. Drop the following objects: the **Corpse** object, that fills the level; the Interface object, in the top left of the scene; the **Interface Fighter** in the radar zone; **Counter Lives** in the reserved space on the left of the radar; the **Score** object on the right of the interface; the **Fighter** object on the playfield; the objects **Alien, Laser, Spore, Mutant alien** and **Surgeon** out of the playfield on the left.



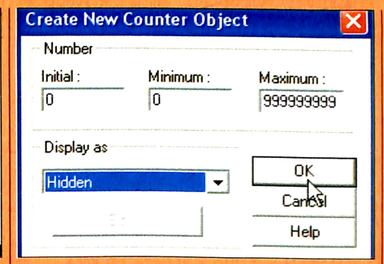
03 DROP A COUNTER

Our game now needs a counter, which means that we are going to have to create a new one from scratch. Click on the **Create new objects** button in the toolbar and then choose **Counter**. Press OK at the following dialog and then drop the counter somewhere over the playfield. This counter will then be used to create the aliens. Rename this counter under the new name of **Creation surgeon**.



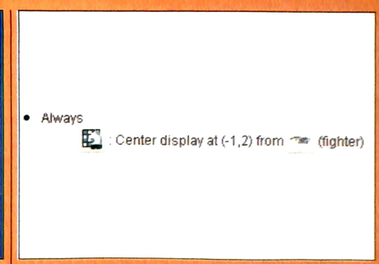
04 MAKE THE SHIP MOVE

We have to define the movement of the player's ship. Right-click on the **Fighter object**, and choose the option **Movement ➡ New movement**. In the next dialog box, click on the button **Eight directions**. Choose a particularly fast speed (about 75 per cent), a slow acceleration and deceleration (25 per cent). Click on the **Directions tab** and only select left and right. You can then try the movement at any time.



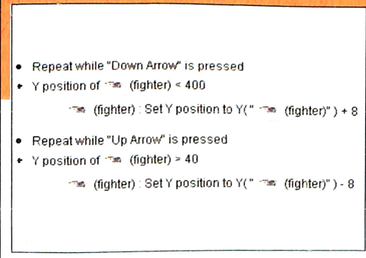
05 ALIEN MOVEMENTS

Let's define the movement of the aliens. Right-click on each of them, and choose **Bouncing Ball movement** in the dialog box. Then enter the following parameters: slow speed (5 or 10 per cent), initial direction-facing top, as in the picture. Enter a slightly higher speed for the **Alien** object, which means it will be that bit harder to destroy. Do the same with the **Spore** object with a speed of 25 per cent for this object.



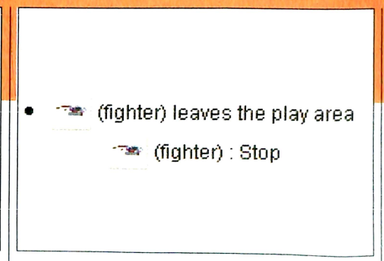
06 SCROLLING

Now we're going to create the scrolling. Click on the **Event Editor** and create a new condition by selecting **Special ➡ Always/Never ➡ Always**. Next add an action. Under **Storyboard Controls** select **Scrollings ➡ Center Window** position in Playfield. Type **–1** in the **x field** and **2** in the **y field**. Click on **Relative to radio** and select the fighter. (Tip: to create a second condition for one event, right-click on the first condition and choose 'Insert'.)



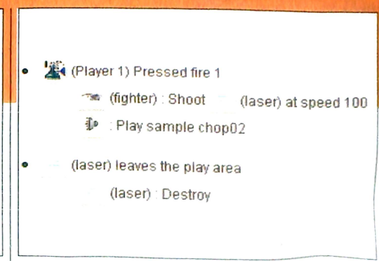
07 MOVE THE SHIP VERTICALLY

Now we create two events on one line: **Repeat while Down arrow is pressed + Y position of fighter is < 400**. The next action (under the fighter) is **Set Y position to Y (Fighter) + 8**. The next condition: **Repeat while Up arrow is pressed + Y position of fighter is > 40**. Set Y position to Y – 8. To get the Y position, under the Fighter object click **Position> Set Y co-ordinate> Edit> Retrieve data from an object**, select the fighter and type + or – 8.



08 LIMIT THE MOVEMENT

We only have so much screen space in which to allow for the ship to scroll to the left and right (the 1,920 x 480 size we set up at the start), so we still need to limit the ship on the left and on the right so it doesn't go out of the playfield. Enter the following event to do so: **Fighter – Test position of Fighter**. Then select all of the arrows pointing outwards. Now for the action under the **Fighter** object, select **Movement** and then **Stop**.



09 SHOOTING BULLETS.

Let's make the ship shoot bullets. We simply test for the [Shift] key to be down, and shoot a **Laser** object. For the condition, select **Player 1 ➡ Repeat while Joystick pressed**, then choose **select fire button**. Under **Fighter** choose **Shoot an object**, select **Laser** and leave default speed at 100. Under **Sound** play **Chop02** from the **Gfactory ➡ Samples ➡ Impacts** folder. Finally, we destroy the **Laser** object when it's out of the playfield.

PART TWO

secret weapons over normandy

A GUIDE THROUGH THE CREATION OF A COMPLEX PLAYABLE MISSION FOR *SWON* USING SLED, THE BUILT-IN GAME EDITOR.

As you're no doubt well aware, *Secret Weapons Over Normandy* is a flight sim that pits the player as an ace combat pilot during World War II. What you may not know though, is that, conveniently, the PC version comes with its own editor, called SLED, enabling the budding mission designer to create their own missions that can be run within *SWON*.

In part one of this series, we looked at the basics of getting a simple mission up and running within the editor. This mission involved placing trucks and enemy planes and assigning various logic tasks to them so that the planes would attempt to destroy the trucks. We also created a mission structure so that there were opportunities to win or lose the mission, depending on the player's actions. Before attempting this month's tutorial, it would be an advantage to have completed the previous one, although it's not critical, if you haven't. To learn SLED's fundamentals or to give yourself a refresher, it may be useful to briefly run through the Help file, paying special attention to the areas named **Getting Started, Logic Reference Guide**, and **Keyboard/Mouse Controls for the Placement Editor**.

This second tutorial builds on the last one by showing some new techniques to add interest to missions, and to make them a little more complex and involving. It explains the use of waypoints and how they can be used for more than just vehicle movement: as wavepoints and cutaway cameras. It also details how to add wingmen and control the difficulty of the mission by adding enemy waves and new goal objectives. Finally, it covers the use of communication between vehicles to prompt new mission objectives and it uses cutaways to increase tension. The tutorial will also introduce new mission logic components which can be used for future missions.

Your mission objective is simple. Two British supply ships are docked in a port in Libya. A squadron of two German bombers accompanied by some crafty BF109 fighter planes are on their way to destroy the ships. Only you and your wingman, Dan, flying vulnerable canvas-covered bi-planes, can stop them. But that's not all – a Tiger tank has recently captured a local airfield to secure a valuable fuel depot, and this must also be destroyed along with the fuel so that it doesn't play into German hands.

ON THE DISC

Two German bomber planes are on a mission to destroy two British supply ships. Only you and your wingman can stop them, but you'll need to fend off the incoming BF109 fighters first. There's also the small matter of destroying a local fuel depot: you're in for a busy day.

Neil Rennison is a Graphics Artist with experience in computer graphics based industries. He has skills in making games and recently provided the 3D artwork and track designs on two racing titles for PS2, Xbox and PC. His favourite games are usually historical based.

DIFFICULTY INTERMEDIATE

TIME TAKEN 1 HOUR 30 MINUTES

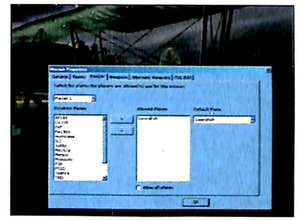
WHAT YOU NEED...
A full version of *Secret Weapons Over Normandy* with SLED installed.

// GAME ON

A step by step guide to creating a more complex mission to run in SWON.

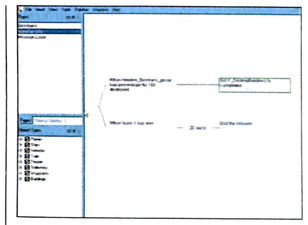
01 LOADING THE MISSION

On the DVD you will find a file named **SLEDTUT02.sld**. Copy this file to the **Custom** folder, found in the **GameData** directory on your install of *Secret Weapons Over Norma*ndy. Now run SWON, and go to **Custom Missions** where you will see a mission named **Aerial Assault!**. Fly the mission and try your best to complete it. You should find all this really easy.



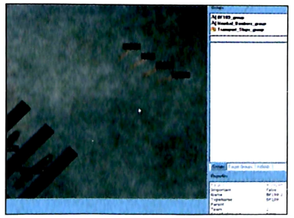
02 RUNNING SLED

Now run SLED and load up the file that you have been playing. As you are now aware, the mission is essentially made up of two He111 planes, and the PLAYER plane. You will also notice that the default plane for this mission is the Swordfish. Check out the **Mission Properties** in the **Tools** menu and take a look at the **Hangar** tab to see how this has been done.



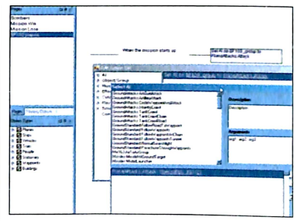
03 CHECKING THE LOGIC

Have a look in the **Logic Editor**. You will notice a page that tells the two He111 bombers to destroy the two docked ships with a simple **AirToGroundBombAndEvade** AI set, along with two other pages that also detail the two outcomes of the mission: winning and losing. Also note the time delay blocks of 20 seconds added so that the mission does not end suddenly.



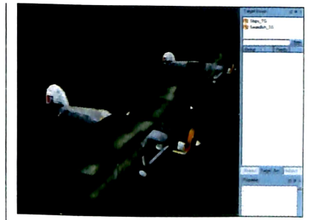
04 ADDING MORE ENEMIES

We need to increase difficulty, so near the docks add four BF109 planes from the **Object Types panel**. In the **Properties panel** make sure their **Team** number is set to **2**, their **InsigniaFlag** is set to **German**, and **Y** height is **140**. Create a group named **BF109_group** and add the planes in order of creation. Make it an AI group and then set the formation to **Line Abreast**.



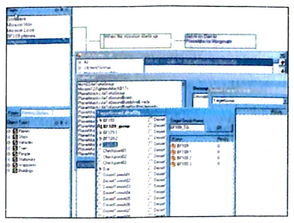
05 ATTACK! ATTACK!

Go into the **Logic Editor** and create a new page named **BF109 planes**. In this page, create a simple **When mission starts up** blocking conditional node connected to an action set node. This will contain a **Set AI** function to tell the **BF109_group** to use a simple **PlaneAttacks:Attack** AI routine to attack the Swordfish_TG target group. Play the mission and find things have got tougher!



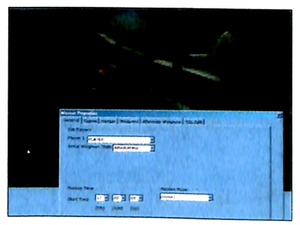
06 ADDING SUPPORT

More than likely you will have found that very difficult, so we are going to offer some help. Create a duplicate of the PLAYER swordfish plane, making sure he is at the same height and orientation as PLAYER. In the **Properties**, name him 'Dan' – your new wingman! Add Dan to the 'Swordfish_TG' target group with a priority of 10. The BF109 fighters should now attack you both instead.



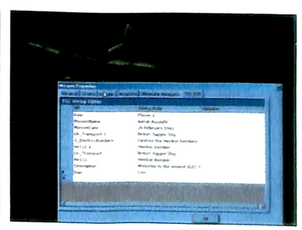
07 GIVING DAN BRAINS

In the **Logic Editor**, create a new page called **Wingman**. Create the usual mission started blocking conditional. For the action set, use Set AI on Dan to use the **PlaneAttacks:Wingmate** AI routine. On the first undefined, select the PLAYER plane, and on the second undefined, create a new target group called **BF109_TG**, containing all BF109s with priorities of 10 and select that. Then play the mission.



08 EVENING THE ODDS

Dan is pretty rubbish, and you'll soon notice that, unless you give him a specific order, he'll sporadically fly around defending you. In order to overcome this, go to the **Mission Properties** in the **Tools** menu, and look at the **General** tab. Change the Initial **Wingman State** to **AttackAtWill**. Also in the **Properties** panel change Dan's **Difficulty** to **Hard**. Then finally, change all the **Difficulty** of the BF109 planes to **Easy**.



09 DAN'S THE MAN!

The next step you'll want to take is to label your wingman. In the **TGL Edit tab** of Mission Properties, create a new ID called **Dan** and new string data called **Dan**. You should find that playing the mission will be easier now. Both Dan and yourself should then make short work of the BF109 fighters, and you should find that you still have enough time to destroy the Heinkel bombers before they take out the ships.

ENABLING AI DIFFICULTY

Fixing a known install bug in SLED.

In step 8 of the tutorial, you will need to be able to modify the difficulty of your wingman along with the enemy planes. Unfortunately, SLED will crash showing an error message which basically says it cannot find the file AIDifficultyEnum.xml. This is now a known bug, and is caused because it doesn't install properly. It is easily fixed. In the GameData folder within the main SWON install directory on your hard drive is an archived file called Game.zip. If you open this you can extract the AIDifficultyEnum.xml to your GameData folder. On a reload of SLED you should now be able to modify the intelligence of allies and opponents, from braindead to impossibly hard!

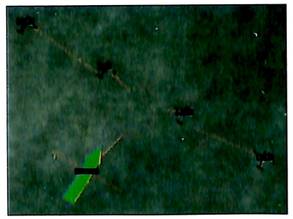
TIME CRITICAL

Knowing when to use 'When' and if to use 'If'.

To enable the logic within SWON to work, it must systematically check through the conditions so that decisions can be made. As these checks are made conditions are grouped into 'time critical conditions' and 'non-time critical conditions'. You will notice that when looking through the Edit Condition Set window, a lot of the conditions are described as 'When Object....' or 'If Object...'. A time critical condition is only evaluated when that condition occurs, thus is attributed a 'When' type. A non-time critical condition occurs when it can be evaluated after the event occurs, thus is attributed an 'If' type. Unless a condition is specifically time critical, it must be assumed that it is non-time critical. Time critical conditions should only ever be used as the first blocking conditional after the root node. In step 21 it is possible to use a time critical condition (When Heinkel_bombers_group ...) in the middle of the logic string, because the original blocking conditional is 'When the mission starts up'. As the mission always starts, it will therefore always start off as TRUE.

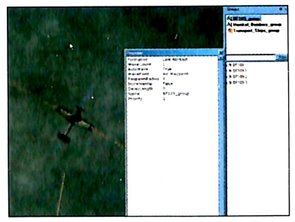
// WAVING, NOT DROWNING

Make more enemies appear using the technique called waving.



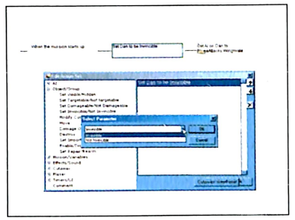
10 ADDING ATTACK WAVES

In *SWON*, having too many enemies on screen at one time can quickly slow down the game, in which case a technique known as waving is used, to add more enemies once the first lot have been destroyed. In the **Object Types** panel, add an **Air Waypoint** to the mission, placing it roughly where the BF109 planes are. Adjust the height and orientation to match the enemy planes.



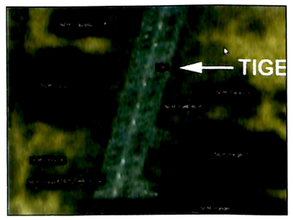
11 WAVEPOINT WAVING

Select the BF109_group and check the **Properties panel**. We want a new group of BF109 planes to wave in where our waypoint is, once the first is destroyed. So set **WavePoint** to be the **Air Waypoint**. Set the **WaveCount** as **1**, which means the planes will only wave in the once. Finally set **AutoWave** to **True** so the waving happens automatically without adding logic.



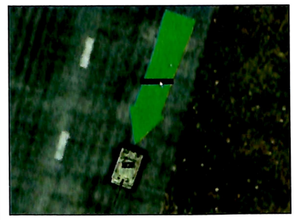
12 DAN THE INVINCIBLE!

When playing this mission, you and Dan should easily clear up the enemy planes. However you may wish to add a little advantage by making Dan invulnerable. In the **Logic Editor**, create a new action set on the Wingman page which contains the **Set Invincible Object/Group** action set, tagged as **Dan** on **undefined**. Place this between the two current nodes and join them up.



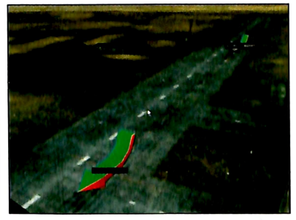
13 NEW PRIMARY OBJECTIVE

So the ships are saved – big deal! We now need to add another challenge in the form of a new primary objective. Look in the **Object Types** panel for a **German Tiger tank** and place it half way down the runway on the airfield situated northwest of the docks. Orientate it so it faces towards the hangars. Set it to **Team 2**, with a German insignia.



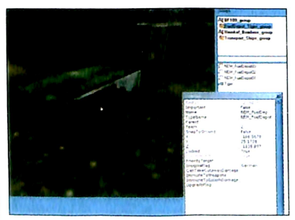
14 ADDING GROUND WAYPOINTS

We want the **Tiger** to drive up and down the runway. Add a **Ground Waypoint** from the **Object Types** panel and place it near the tank. In the **Properties** panel make sure **SnapToGround** is tagged as **True**. Whenever you now move this waypoint, it will snap to the ground height. Rotate it so it faces the same direction as the tank.



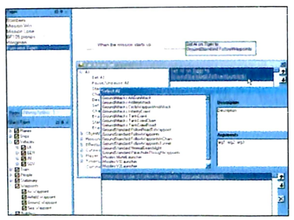
15 ANOTHER WAYPOINT

Duplicate the waypoint and move it further down the runway near the hangars, keeping it pointing in the same direction. A line appears joining the two. **Right-click** on the new waypoint and select **Add Next**. A new line will appear which you need to point in the direction of the original waypoint. The tank will crawl from one to the other repetitively.



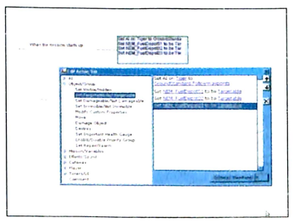
16 FUEL DEPOT ALLIGANCE

You will notice around the airfield, three fuel depots named **NEM_FuelDepot** in consecutive numbers. Click on each and modify their **Properties** so that they are **Team 2** and with German insignias. Create a new group called **FuelDepot_Tiger_group** and place the tank and the three fuel depots objects within it. The new primary objective will be to destroy these four.



17 MOVING THE TANK

In the **Logic Editor**, create a new page called **Fuel** and **Tiger**. Create a standard When the mission starts up blocking conditional. Create an action set, and **SET AI** on the Tiger tank to use the **GroundStandard:FollowWaypoint AI** command. Set the first waypoint you created as **undefined**. The tank will trundle from waypoint to waypoint.

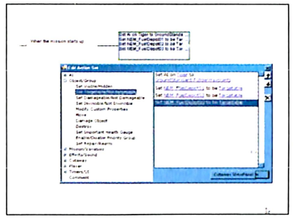


18 DEPOTS TARGETABLE

In the same action set, go to the **Object/Group** section of the **Edit Action** Set box and add an action called **Set Targetable/Not Targetable**. Do this three times. On the first undefined, add the first **fuel depot** object. Do exactly the same for the other two **fuel depot** objects in the game, and these objects will then be targetable as if they were a vehicle.

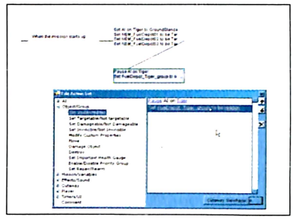
// PRIMARY OBJECTIVES

Know your goals – and stick to them.



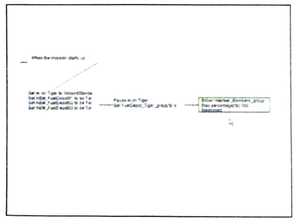
19 CREATING A NEW GOAL

We want this new primary objective to only become activated once the previous goal has been a success. First a goal must be created. Go to the **Goals** window found in the **Tools** menu and create a new goal called **G_DestroyFuelling**. Set the **Goal State** to **Hidden**. In the **TGL_Edit**, create it as an **ID** and type string data **as Destroy fuels depots and Tiger tank**.



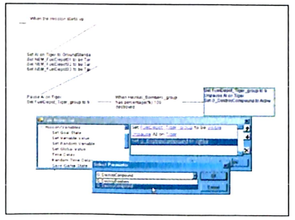
20 PAUSING AND HIDING

We do not require any of these new objects to be active within the individual mission at the mission start. In order to make them inactive it is very simple; we can merely hide them and pause the AI commands. Create a **new action set node** and set up **two action sets** within it to **Pause AI** on the Tiger tank, and also to **Set Hidden** the **FuelDepot_Tiger** group.



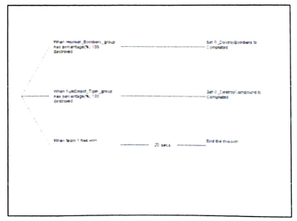
21 MAKING IT TRUE

Go to the **Mission Win** page and copy the blocking conditional **When Heinkel _bombers_group**. Paste this back onto the **Fuel and Tiger** page. This now needs to be connected to the last action set. The premise has now been set that if both of the bombers have been destroyed (the first primary objective) then whatever action set follows will become true in a logic sense.



22 UNPAUSING, UNHIDING

Copy and paste another version of the second action set node. Modify **Pause** to **UnPause** and modify **Hidden** to **Visible**. Connect it to the previous blocking conditional. Add another action set for **Set Goal State** within the node to make **G_DestroyFuelling Active**. Once the first objective is successful, the objects will be visible and a new goal initiated.

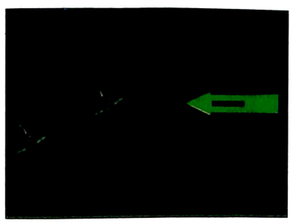


23 WINNING THE MISSION

To make this goal properly active, you need to give the player the opportunity to complete it. Go to the **Mission Win** page and copy and paste the top two blocking conditional and action set nodes. Connect in the middle, changing **Heinkel_bombers _group** to **FuelDepot_Tiger_group** and **G_DestroyBombers** to **G_DestroyCompound**.

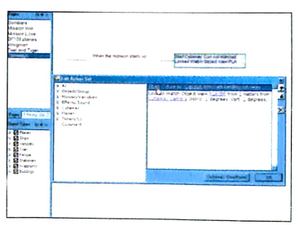
24 TESTING IT OUT!

Now fly the mission again in *SWON*. Start off by destroying the bombers while fending off the BF109 planes with the assistance of Dan. A message will appear saying the goal is completed, followed by a further message saying that a new primary goal is active. You can now fly to the airfield and destroy the tank and fuel depots in order to win the mission.



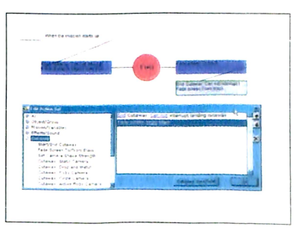
25 INTRO CUTAWAY CAMERA

Now we want to dramatise the mission by adding an intro. In the placement editor, place an **Air Waypoint** in the scene to the right of the **PLAYER** plane, and at the same height. Then rotate the camera around so that it faces both the **PLAYER** plane and **Dan**. Finally, rename this new object **Cutaway Camera**. Now create a **new logic page** and name it **Cutaways**.



26 STARTING CUTAWAY LOGIC

Create a **standard start mission blocking conditional**. Create a **connected action set node** and select two **action sets** from the **Cutaway** section. The first is a standard **Start Cutaway** action with no modifications. The second is a **Cutaway: Locked Object Watch** action which views the PLAYER from the **Air Waypoint** renamed **Cutaway Camera**. Leave all the values at **0**.



27 ENDING CUTAWAY LOGIC

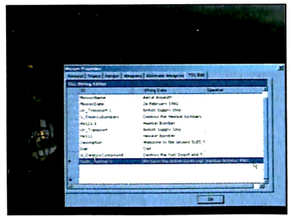
Next, you need to attach a time delay set to five seconds – this should be enough. Create a new action set node using the **Fade Screen To Black** cutaway action. Create and connect another action set node containing an **End Cutaway action** which cannot be interrupted, followed by a **Fade Screen From Black** action. You should find this is sufficient for an intro. Try it out!

OPTIMISATION IS YOUR FRIEND

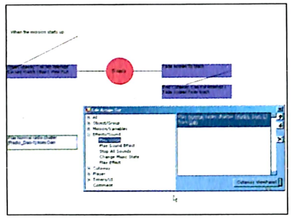
Make your mission run at peak performance.

All modern computer games are really smoke and mirrors. In order for the purchaser of the latest game not to have to upgrade their hardware too often, developers, and more importantly level designers, use as many tricks as possible in order to make the player think there is more happening than there really is. If you have finished the tutorial, you have will have used a couple yourself: waving and hiding. When creating your own missions – even at a paper design stage, it is worth anticipating the impact that there will be on the update speed of the mission. Remember your mission may be being played by players with lower spec machines than yours. Use waving as much as possible so fewer vehicles are being used at any one time. Also try and spread the mission objects – especially those with AI – across the terrain, rather than bunching them in one spot. Finally, effective use of hiding and unhiding to again minimise the amount of objects being calculated. If a certain vehicle is no longer any use to the player or mission thread, then hide it out of the way.

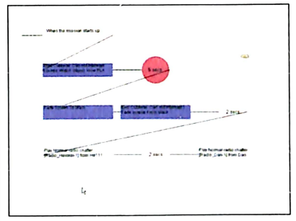
// IT'S GOOD TO TALK
Radio chatter is an important component in this mission..



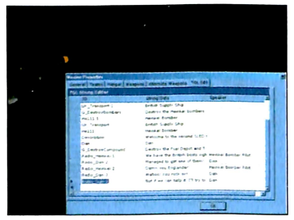
28 ADDING BOMBER CHATTER
In the mission we can add radio chatter between the various pilots to help guide the player through the objectives. Go to **TGL Edit** in the **Mission Properties**. Create a new **ID** called **Radio_Heinkel-1**. In the string data, enter **We have the British ships sighted! Let's destroy them before we have company!** In the **Speaker column** add **Heinkel Bomber Pilot**.



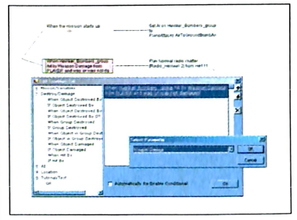
29 ADDING DAN RESPONSE
Create another new **ID** called **Radio_Dan-1** and in the string data column enter **Not if we can help it! I'll take out these fighters – you go and down those bombers!** In the Speaker column add **Dan**. Go to the **Cutaways logic page** and create an **action set node** containing an Effects/Sound action called **Play Voice**. Set the undefined tags to **Radio_Dan-1** and **Dan**.



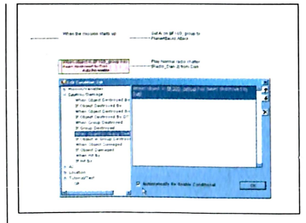
30 INITIAL CHATTER
Duplicate this action set node and change **Radio_Dan-1** to **Radio_Heinkel-1** and change **Dan** to **He111**. Create a two-second time delay and connect it to the end of the cutaway chain. Next connect the Heinkel radio chatter node, followed by a further two-second time delay. Finally, connect the Dan radio chatter node to the end. You should have a nice intro and two pilot's war of words.



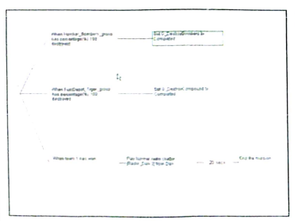
31 MORE CHATTER
To give the mission some character, we can add some more chatter. In **TGL Edit**, create three new pieces of radio chatter The first from a Heinkel pilot saying **Damn you Englander!**, the second from Dan saying **I've shot down a fighter!**, and the third also from Dan saying, **You rock, sir!**. Make sure the **ID names** are labelled like **Radio_Dan-2** in consecutive numbers.



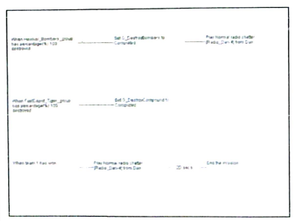
32 HEINKEL PILOT'S CURSING
In the **Bombers logic page**, create a new **blocking conditional** connected to the root node. In the **Edit Condition Set** window, choose **When Hit By** from the Destroy/Damage list. Tag the first undefined as **Heinkel_bombers_group**, the second tag to **Weapon Damage**, and the third tag as **PLAYER**. Connect an action set containing a **Play Voice action** linked to **Radio_Heinkel-2**.



33 DAN'S JOY!
Create two connected nodes on the **BF109 planes page**. The action set should contain the **Radio_Dan-2** play voice. In the blocking conditional, use **When Object in Group Destroyed By**, which sets BF109_group as the group and Dan as the destructor. Make sure **Automatically Re-Enable Conditional** is ticked. Whenever Dan destroys a plane, his message will appear.



34 DAN'S CONGRATULATIONS
In the **Mission Win logic** page, insert a **Play Voice action set** containing **Radio_Dan-3** inbetween **When team 1 has won** and the time delay. Finally, back in TGL Edit, enter one more ID **Radio_Dan-4** to be **Well done sir! You destroyed them!** Now quickly fly to that airfield and destroy the fuel depot – and get that damned Tiger too while you're at it!'

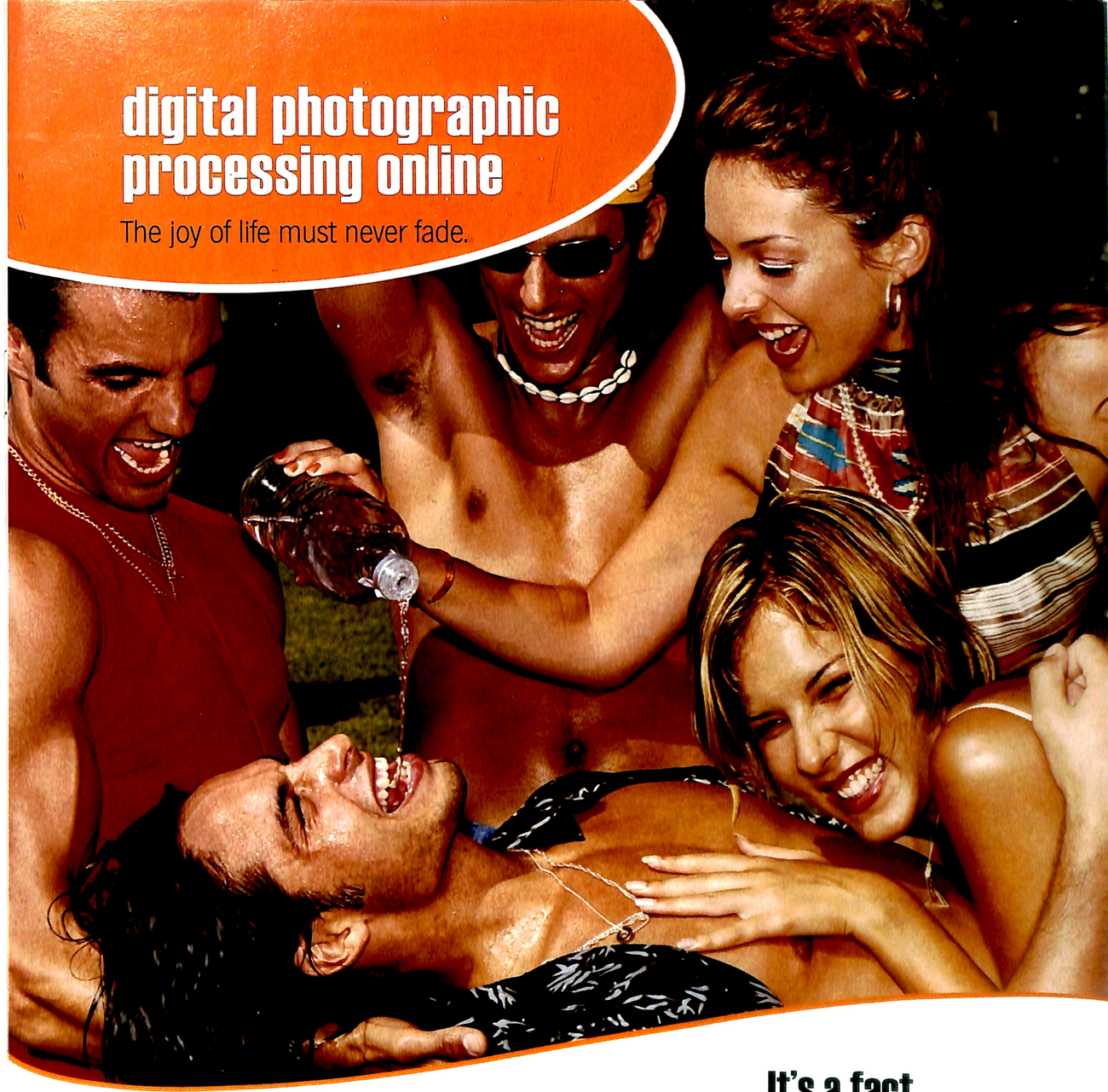


35 REVEALING NEW GOAL
On the **Mission Win logic** page, insert a **Play Voice action set node** containing Dan's final message just after the node, to say that **G_DestroyBombers** has been completed. Dan will prompt the player to move on to the next objective. Having Radio Chatter like this is a good way of prompting the player towards new objectives.

36 A FURTHER CUTAWAY
To add just a little bit more suspense and to give the player more information, you could add a new cutaway showing the tank and airfield. You could also move Dan's message to within the cutaway so that continuity is maintained. If you load up **SLEDTUT02_completed**, you will see an example of how this has been achieved.

DIRECTING YOUR MISSION
Make your missions dramatic with clever use of cutscenes.

If you've played the missions in *SWON*, you'll notice that some have very cleverly been put together in more ways than just the action the player is involved in. Just like any movie, setting the stage for events is paramount in providing a level of tension. In terms of your mission, it can also give you a chance to show the player various mission objectives, and to give the player an impression of the various vehicles within the mission. SLED can give you the opportunity to create quite complex cutscenes, using a combination of waypoints, and logic commands. Unfortunately this is not a movie editor and to get the desired results may take some time. However, if you can master it, there are numerous techniques available to add more excitement to your cutscenes. The most basic of these is the camera shake, which can be added as an Action Set in the logic editor. Other more glamorous edits include damaging objects, or setting a camera so that it follows a bomb or rocket to its intended target. Use the 'Cutaway ViewPanel' in the Tools menu to help get the best shots.



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PART THREE

UT2003/04

EMBARK ON A SEARCH OF MORE ADVENTUROUS ENVIRONMENTS IN PART THREE OF OUR TUTORIAL.

When it comes to level design, Richard knows the one key rule – no matter how complicated your maze gets, you can always solve it by heading left all the time. Also, your players will murder you in your sleep if you use them.

DIFFICULTY INTERMEDIATE

TIME TAKEN 2 HR 30 MINS

WHAT YOU NEED...
Unreal Tournament 2003 or 2004, using the included level editor.

UT2003/04

What's a 3D action game without action? You may as well just stare at a photograph. This month, we'll be looking at two techniques you need to create everything from orbital elevators to incredible crushing machines, simply by setting the necessary keyframes in *Unreal Editor*. We then head out of the dark confines of our spaceships and starbases to look at how we can create huge sprawling vistas for long-range combat – and how best to balance them against the more powerful shooters in the Unreal arsenal.

Mastering Movers isn't a difficult process, provided you plan out exactly what you want them to do. The catch comes in making sure you're getting the best results from them. Nobody wants to play a torturous level where the floors are constantly shooting around the sky and everyone keeps tipping into pits of lava, but then, slogging up staircases in search of an opponent isn't necessarily that much fun either. As with every part of level design, control is the key. *Unreal* gives you enough flexibility to have your level behave exactly as you want it to, from secret doors that fly open when you shoot them, to crushing traps that are triggered under your feet. The easiest piece of advice to give for these is always to warn the player before squishing them or depriving them of a prize. A secret door should always have something – a slightly misaligned texture, or an eye-catching decoration – to draw the player's attention to it, rather than being the level designer's sole playground. Ultimately, you'll always get more satisfaction out of a fair fight than a rigged battle...even if the sight of that Redeemer can be mighty tempting!

USE OF WEAPONS

You've no doubt seen the great additions for gamers in the new *UnrealTournament*, but what does it mean for us editors?

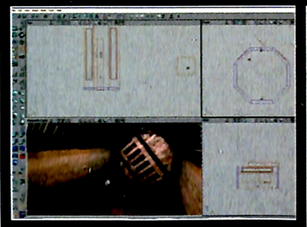
Meet your enemy – your nemesis. The Moriarty to your Sherlock. It's the Translocator, and it's what players can use to get to parts of the map that you never wanted them to see. Never underestimate the tactical advantage of a nook, a cranny, or the ability to teleport right out of a level – and plan accordingly.

Speaking of unbalancing, the Lightning Gun can be a major problem for wide-flung levels. While, unlike the traditional sniper rifles, you can see the shot, no other *Unreal* gun is able to fight back effectively at long range. Keep your areas tight and 'spam' attacks from the Link Gun or Flak Cannon soon even the odds.

The Redeemer is the single most powerful weapon in the game, and can easily level entire teams in the wrong hands. Try to avoid it on all but the biggest maps where players have the chance to shoot it out of the air, and use it sparingly. Suddenly getting wiped out by a shockwave just isn't that much fun after all.

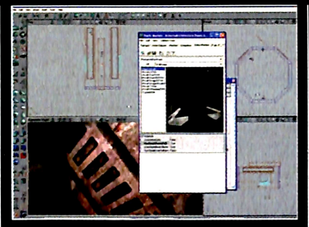
// BUILDING BRIDGES

Where there's a will, there's, er, static meshes and skyboxes.



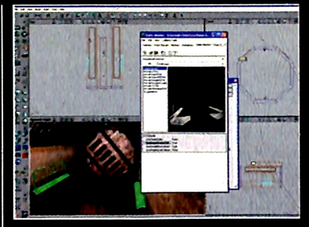
01 MEANWHILE, LAST MONTH...

This should look familiar. It's the same cigar-box test room that we created last time to show off static meshes and skyboxes. This time however, anyone wanting to get across has a problem – there's no bridges. We need to come up with a way of reaching that big door in the background.



02 WALK THIS WAY

Let's start by adding a few **Static Meshes** to the mix. This time however, we're going to be a little more precise about what we want. You don't have to accept the standard size and shape that they come out of the library in – and they won't usually fit your design like that. Find and import a **Walkway** from **HumanoidHardware**.



03 BRIDGE TOO FAR

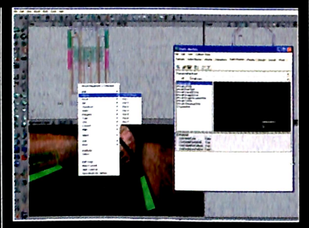
To resize the bridge (or indeed any other item), we simply have to open up its **Properties** window, scan down to **DrawScale** and tweak the values accordingly. **DrawScale** applies consistent scaling to the x, y and z access, with the three options under **DrawScale3D** getting down to the nitty gritty. Here, we want to turn it into a platform.

04 DON'T LOOK DOWN

Without a suitable bridge, the player will drop straight down into instant death. To get around this, we're going to create a floating platform. Jumping on this will provide easy access to the other side. For now, we're going to use a second walkway mesh. Advanced texturing, mover design and other trickery can come later.

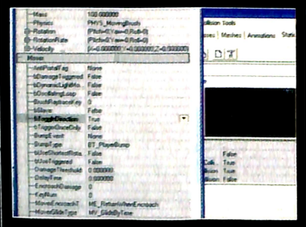
05 BLOCK BY BLOCK

Right-click on the **Walkway** in the **Static Mesh browser**, and click on the **Mover** button in the **main tools panel**. This will create a special mesh object that we can animate by setting **keyframes**, and script to react as we want. The same technique works for elevators, moving bridges or even general background animation.



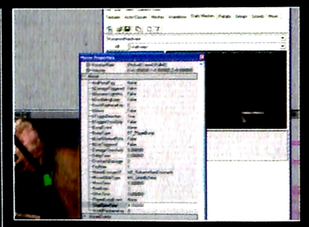
06 ABSOLUTE POSITION

Right-click on the **Mover Walkway**, select the **Mover menu** from the shortcut menu and click on **Key 0**. Drag the walkway down the corridor and set its new position as **Key 2**. *Unreal* will automatically calculate the path for this. Load up the game and...nothing will happen. The Mover has to be triggered before it will work.



07 TRIGGER HAPPY

Your trigger can be anything from how much damage the Mover takes, to the player standing on it. For our purposes however, the latter is the most useful. **Select Properties**, scroll down to **Object Settings** and pick **StandOpenTimed** from **InitialState**. The Mover will now automatically shuttle you across to the other side of the room.



08 BACK AND FORTH

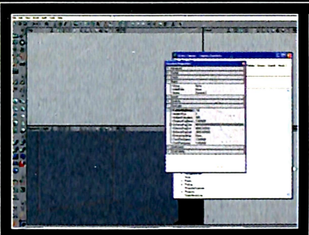
Take some time to experiment with the different **Mover** options. You can set them up to be friendly and willing – an elevator bouncing off a player's head – or build convoluted crushers that take no prisoners. Every setting you could possibly need is listed in the main **Mover property** window, as shown here.

09 TERRAIN MAP

Something else entirely new. One of *UnrealTournament 2003*'s most noticeable abilities is the way that it can render huge terrains – used on levels like Antalus, and plenty of the maps in the new *Unreal Tournament 2004*. Let's now take a quick look at how we can make this kind of terrain for ourselves.

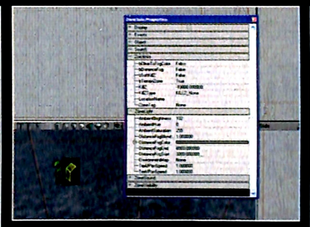
// THE RIGHT TERRAIN

It's all about the texturing.



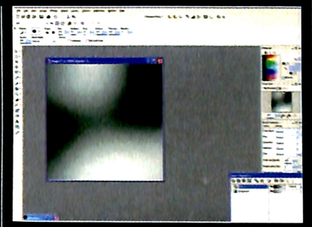
10 FLAT EARTH

Create a huge area to hold the terrain. We've used 5000x5000x5000 to keep everything manageable, but you'll probably want to get much bigger than that when you're making a terrain based level. Add a **ZoneInfo actor** (you'll find it in the **Actor Browser** under Info) and place it in the middle of the cube.



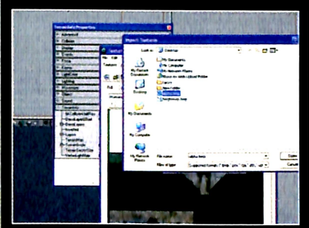
11 ROCK AND ROLL

Right-click on the newly created **ZoneInfo**. Start by throwing some light on the situation by clicking the **ZoneInfo tab** and cranking up the **AmbientBrightness** (in ZoneLight), then scroll to the **ZoneInfo tab** itself and set **bTerrainZone** to **true**. We haven't actually created any land yet – just told Unreal that we want to do so.



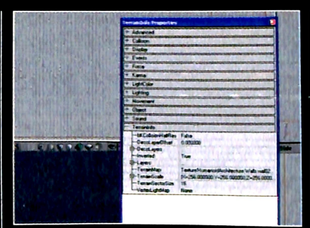
12 HEIGHT MAPPING

Terrains aren't standard polygon objects like Static Meshes. Their designs are based on 'height maps' – black and white image files. White represents the highest point, black the lowest and the shades of grey the many stages in between. Load up your favourite art program and create something like this image. Save it as a 256 colour bitmap.



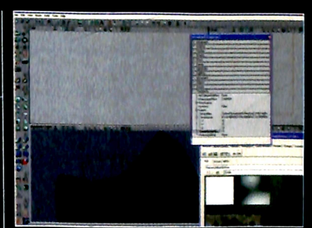
13 IMPORTING AND EXPORTING

Import the height map by going into **Texture Browser**, selecting **File ➔Import** and picking the newly created image. If you encounter difficulty, make sure that it was saved in 256 colour mode. Select it from the **Texture Browser** and create a **TerrainInfo** actor in the middle of the big cube. Open up its properties.



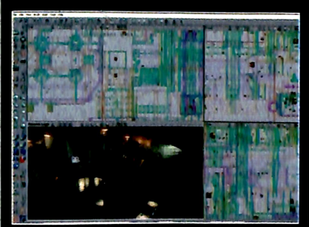
14 PAINTING THE WORLD

Scroll down to the **TerrainInfo** options, open them up and click **Use** next to the **TerrainMap** option. Your heightmap image will be loaded in. To actually be able to see it however, we need to go into the **Layers** section, set a texture and import a pure white bitmap as **Layer 0's alpha channel.** Set U and V to 1.



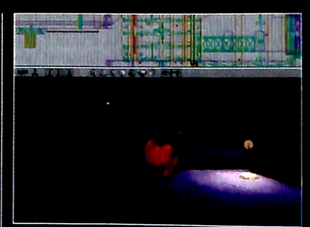
15 LAND HO!

...and hey presto! Sadly, this terrain won't look anything like as good as the ones in the main game, but only because that requires much more carefully controlled texturing. If you don't see anything appear, it could be that the terrain is actually outside your main cube. When in a **bTerrainZone**, you'll be able to walk on it – but outside that, it'll be ghostly.



16 ADDING THE ACTION

We've actually covered most of *Unreal*'s key features...but we've yet to add anything that makes it into much of a game. Our levels are single-player, and trying to throw the bots in just leads to a whole lot of telefragging, and not much of the conventional kind. To finish off this month, let's add the AI.



17 ACTUAL IDIOTS

The Unreal bots aren't actually that smart. Throw them into a straight map and they'll run around like headless chickens. To tell them where to go, we need to give them **PathNodes**. Place these around your level to automatically generate the routing information that they need to find the different weapons and items.

18 LOTS OF DETAIL

It's hard to understate just how much information is required for a well pathed-out map. You have to tell the bots where to get onto lifts, and where they should stand when on them, point to good places to jump from, and make sure your weapons are positioned where they'll go collect. The best way to test is to play your map in **Spectator mode**. G

COMING SOON IN 2004

You've no doubt seen the great additions for gamers in the new *Unreal Tournament*, but what does it mean for us editors?

Vehicles are the single biggest addition. Depending on what you put down, players will be able to fly right up to the top of your skybox, leap from hills into enemy territory, or unbalance your weapon placing with a single tank round. There's plenty of opportunity, but just as many challenges for the budding designer.

One of the biggest is Assault, which you may remember from the original UT. The challenge here is to provide a linear, mission based obstacle course for players that doesn't leave them feeling either lost, or out of control. These are the hardest of all map types to put together correctly, but that means it's easier to stand out.

Onslaught is the major new game mode, and one of the easiest to plan – if not balance. The players can run anywhere on it, but their progress is tied to the capture of the main power nodes on the map. Make sure that players can always pull back from the brink of disaster, while making the action as fluid as possible.

in hindsight
JULIAN GOLLOP Laser squad nemesis

WHAT WORKED? WHAT DIDN'T? DEVELOPERS TALK CANDIDLY ABOUT THEIR WORK IN THE FIRST OF OUR GAME POST-MORTEM SERIES. BY KIERON GILLEN.

There's no small irony in that the first game to be considered in our post-mortem column isn't really a true post-mortem. From a development side, the single most noticeable feature of *Laser Squad Nemesis* is that it's constantly being updated and its development cycle is, abstractly, endless. This means that rather than an examination of something in the past, we're cutting apart something still living: vivisection rather than post-mortem.

Laser Squad Nemesis debuted to immediately positive reviews receiving 83 per cent in issue 134. It was Codo Technologies' first game; the Gollop brothers' previous studio, Mythos, had closed after the ambitious *Dreamlands* was cancelled. Disheartened by the treatment they'd received from major publishers, *Laser Squad Nemesis* was an attempt to work outside the mainstream system.

Since the *X-com* intellectual property was owned by their publisher Microprose (which, through a series of buy-outs, ended up under Infogrames' auspices – leading to such entirely irrelevant games to the franchise as third-person action-shooter *X-com: Enforcer*) they turned to an earlier game they did own the rights to; the original *Laser Squad*. This laid much of the groundwork for the later *X-com* games and its straight conflict between two forces made the perfect core for a play-by-email game. Rather than a set price, the game is paid for by subscription, like a massively-multiplayer game with a fee paid every month after the initial three month trial. Initially only available online, last year Just Play signed the rights to get *Laser Squad Nemesis* into the shops.

Now released in a highly playable and polished form, the game has been expanded and improved since, with four separate playable races in the full game; the technologically centred Marines, the battle-bot dependent Machina, the multiplying xeno-beasts, the Spawn and a new race, the classic aliens of conspiracy fiction, the Grey. With a devoted community and array of leagues, as well as a host of impressive review scores, *Laser Squad Nemesis* is proof that it is possible to create something of worth outside of the standard publisher/developer relationship.

PCFORMAT SAID
Laser Squad Nemesis
PCF 134 – 83%

"The world desperately needs the like of *Laser Squad Nemesis* but it hasn't realised it yet. It's sociable, it's addictive; you'll be talking about your last minute victory with a single scanner bot down the pub for hours, and you'll develop grudge matches to rival the Cold War. Only via email, instead of dummy nuke attacks of course."

GameMaker What was the original conception of *LSN*?
Julian Gollop, Managing Director of Codo The original idea of *LSN* was to create a simple two-player email game which we could produce quickly and distribute d rectly on the internet. The original inspiration was, of course, the original *Laser Squad* which we made in 1988. In those days, the internet was not available to most people, but *Laser Squad* was a great two-player tactical war game. We thought it would be a great idea to update it, but rather than simply copy *Laser Squad*, we also wanted to create something new. We have made many tactical squad level games, all with slightly different systems, and *LSN* is an evolution of what we have been doing for many years. The system employed in *LSN* uses distinct turns, but the game runs in real time, so you get the fine control of turn-based games with the action feel of an RTS. We wanted *LSN* to be easy to play, but with enough depth to keep people playing for a long time. And I think we have achieved this.

GM What initial problems did you face when putting it together? How did you tackle these issues?
Gollop We had to learn Linux and SQL to develop the server side of the system, but we manage quite rapid progress with this, thanks partly to the awesome power and simplicity of Python, the programming language we used to glue all the server elements together. The server had to receive emails from players, process the turns and send the results back, while maintaining lots of statistics on players and games. Perhaps the biggest problem was trying to get it all done within a short time, including all the artwork and animation. It took us about nine months before we launched the beta testing, and that's nine months living on our savings without anything resembling an income. So the financial pressure was rather large, but we just had to get on and work hard.

GM *LSN*'s constantly expanding and developing state is one of its prominent features. Has it caused any problems you'd warn people of, if trying something similar themselves?

***Laser Squad Nemesis* is an amazing slow-burn seller, considering its online origins.**

The graphics might be primitive, but the gameplay isn't, with balanced and strategic chess-like complexity.

GOLLOPING THROUGH THE AGES
The history behind the nemesis.

TIME LORDS (1993)
Julian Gollop's first work as designer, inspired by a pencil-and-paper game. This is of his own devising and required a lot of referee work to keep track of the time manipulations, making the transition to a computer referee ideal.

CHAOS (1996)
The first Gollop-related masterpiece. Up to eight players take the position of a wizard, summoning monsters, with one desire: to win; it was to prove the archetype for later Gollop fantasy games.

REBELSTAR RAIDERS (1984)
The roots of *LSN* are here, in this two-player single-screen strategy. Inspired by the boardgame *Sniper*, this added a sci-fi theme to the turn-based squad-tactics. The sequel *Rebelstar* added scrolling maps and a computer opponent.

LASER SQUAD (1988)
Another few steps along the *Rebelstar Raiders* road, and another distinct classic. Expanded from *Rebelstar* by expanding what you could equip your soldiers to do, and a joystick-lead interface. Also accept Ed expansion packs with new missions.

LORDS OF CHAOS (1990)
As *Laser Squad* was to *Rebelstar*, so was *Lords of Chaos* was to *Chaos*. However, the evolutionary leap was all the larger; it took in elements of role-playing and puzzle solving in the single-player only methods. Retained the expansion pack possibilities of *Laser squad* too. Sophisticated, but lacked *Chaos*' animal fury.

UFO: ENEMY UNKNOWN (1994)
Or, with its American title of *X-Com: UFO Defence*, what took *Mythos Games* (as the Gollops were now known) to a world-wide audience. In battles, this took the form of an isometric-*Rebelstar* style game.

X-COM: APOCALYPSE (1997)
After the more standard sequel of *X-Com: Terror From The Deep*, Mythos started work on this highly ambitious project which involved modelling an entire metropolis, but much of this was stripped out during the debugging process; the most notable advance was a real-time option to play.

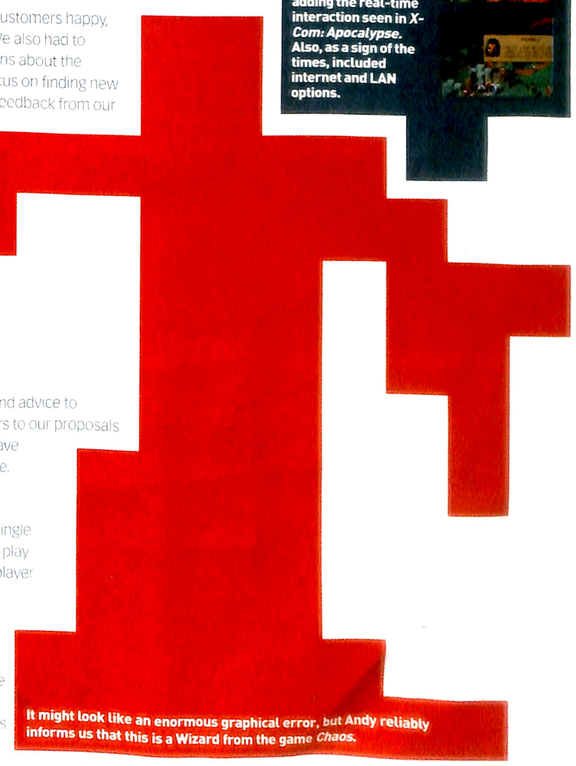
MAGIC AND MAYHEM (1998)
The last game released by Mythos, before starting work on the cancelled and lost *Dreamlands*. This was very much based in the *Chaos* family tree, following on from the role-playing, puzzle and adventure elements which had its debut in *Lords of Chaos*, while adding the real-time interaction seen in *X-Com: Apocalypse*. Also, as a sign of the times, included internet and LAN options.

Gollop The main problem it causes is a lot of work. But we have to keep our existing customers happy, which means adding new features, fixing bugs and dealing with technical problems. We also had to manage our online community, which has many vocal people making many suggestions about the current state of the game and its future direction. At the same time, we still have to focus on finding new players. However, there are many benefits to creating a game like this. We get a lot of feedback from our players, which is generally very helpful. The players have also contributed a great deal to the game by running their own tournaments, helping new players, and creating maps using the built-in map editor. I would actually recommend this approach to other independent developers: produce something as quick as you can, start selling it, and then improve on it with the help of your player community.

GM Looking back at *LSN* in its current state, what are you pleased, and not so pleased with?
Gollop I'm actually most pleased with our players. They have created a great community that adds value to the game and offers a lot of help and advice to newcomers. I have been least pleased with the response of many big games publishers to our proposals to develop the game further with better development funding. Fortunately, Just Play have recently released the retail version of *LSN*, which has helped us reach a wider audience.

GM If you could change any previous decision, what would it be?
Gollop If I could change any previous decision, it would probably be to have added a single player component to the game much earlier. This is mainly because many people who play computer games still prefer to play alone. However, we have now completed a single player version of the game which will be launched very soon.

GM What lessons are you taking forward from this project?
Gollop We have learned many valuable lessons. Perhaps the most important for us, and any other small independent developer, is that it is necessary to devote a lot a time to marketing and selling the game, and not just focus on the development side. The other important lesson is that our player community is just as much part of the success of the game as anything else, and they should not be taken for granted.



It might look like an enormous graphical error, but Andy reliably informs us that this is a Wizard from the game *Chaos*.

odd mods

SOME MODS ARE DESTINED FOR GREATNESS AND SOME ARE JUST ODD. MARK HOLTHAM INVESTIGATES L337.

Sweet Dreams

Rayman goes raving but can't hack the pace.

UNREAL TOURNAMENT 2003

It's Saturday morning, your head's pounding and you've no recollection of the night before's activities. You have the strange feeling that someone spiked your drink with intent to steal your trousers. It's a situation that can be likened to the first steps your character takes within the *Sweet Dreams* world. This environment is a clunky psychedelic mess, built using the *Unreal Tournament 2003* engine and navigated from a third-person perspective. The enemies eerily resemble those from *Rayman*, which incidentally looks like the inspiration for this mod. This is overly harsh, we know. In its favour, *Sweet Dreams* does show what can be done with Unreal Editor. On startup, you are thrown into an interactive menu where you run around your character's bedroom – that in itself is a unique touch, in face of all the first-person shooters out there. However, this doesn't save it from feeling like an 'I told you so' tech demo.

http://gamestudies.cdis.org/~sdreams

Jupiter Effect

Blow things up in this futuristic city.

UNREAL TOURNAMENT 2003

Development appears to be stagnant here, an all-too-common situation with mods. It's just sitting there doing nothing, like the wedge of Stilton you get in your Christmas hamper – totally unwanted but not completely disliked. *Jupiter Effect* has a great setting and, if given the extra attention it deserves, would make a fantastic light-hearted deathmatch mod, rather like a good blend of Sega's *Virtual On* arcade game and the *Macross* anime series. Sadly, *Jupiter Effect* is hindered by two major bugs. In the odd map bullets can be shot through buildings and objects. This is fixable and not totally unusual in an early developed mod. The second bug is worse; having this installed in your hard drive will hinder your ability to play other mods, thanks to its mucus-like files that infect your *UT2003* folders. With extra effort, *Jupiter Effect* could have been a contender, but opted to be a bartender, living on the minimum wage.

www.planetunreal.com/je

Air Buccaneer

Like a Johnny Depp film – without the excitement.

UNREAL TOURNAMENT 2003

Pirates – high seas adventurers and a cool man's clown. As a pirate in *Air Buccaneer*, though, you are neither of these and are more likely to be likened to a bizarre hybrid of Nora Batty and Captain Pugwash. Thoughts of heroically trashing the enemy within an inch of their lives are thwarted as you step on to the hot air balloon-come-shanty. It seems that the forward momentum of the airships is solely dependent on the wind speed and here is where the problem lies. In the period of time that it took to get within shooting range of the enemy, we had butchered our way through a cup of tea and half a pack of Hobnobs. The idea, however, is great and some thought has been put in to this mod. It's just that it feels as if life itself were sucked out of us with an industrial-strength lollipop-testing machine. With a few added improvements this could well be a good mod, but sadly the needle hovers at the OK marker.

http://ludocraft.oulu.fi/airbuccaneers

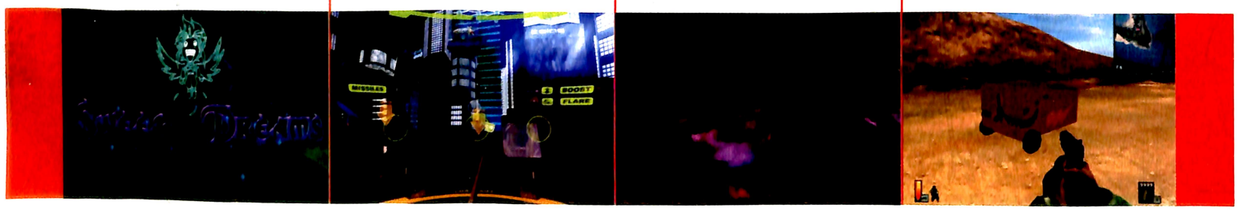
BiTurbo

A childlike nature overrules adult's repressive attitude.

BATTLEFIELD 1942

The *BiTurbo* mod for *Battlefield 1942* claims to change the speed at which you can fly or drive your vehicles, plus it adds new vehicle skins. These range from 1960s hippie-designed jeeps to jazzed-up F4U-1 Corsairs. The creator has also added exhaust pipes to the majority of vehicles, to give a visual aesthetic to the insane velocity you invoke when using the secondary fire mode. This is best described as like a boxful of Chinese fire crackers attached to an Action Man jeep. As a whole, this mod is momentarily enjoyable, however, there is a new vehicle to play with – the cardboard aeroplane. This harks back to the days when you were more interested in the box itself than its contents. The plane is stupendously fast, making it impossible to use for combat. The fun of this mod is geared towards stunt flying and seeing how many ways you can spontaneously combust your cardboard coffin. A pointless mod for LAN parties, but fun.

http://www.hslan.de/biturbo



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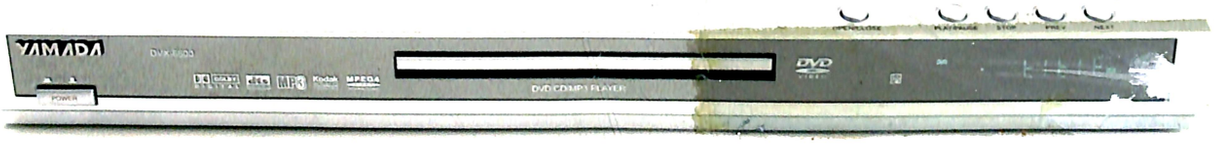

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